Technology
BECAUSE courageous men planted the seed and nurtured it through years of storm and drought to today's needed harvest, the WESTERN HEMISPHERE HAS ITS OWN WOOD PULP SUPPLY as essential to defense as wheat.
Review Number - May 1941
PACIFIC
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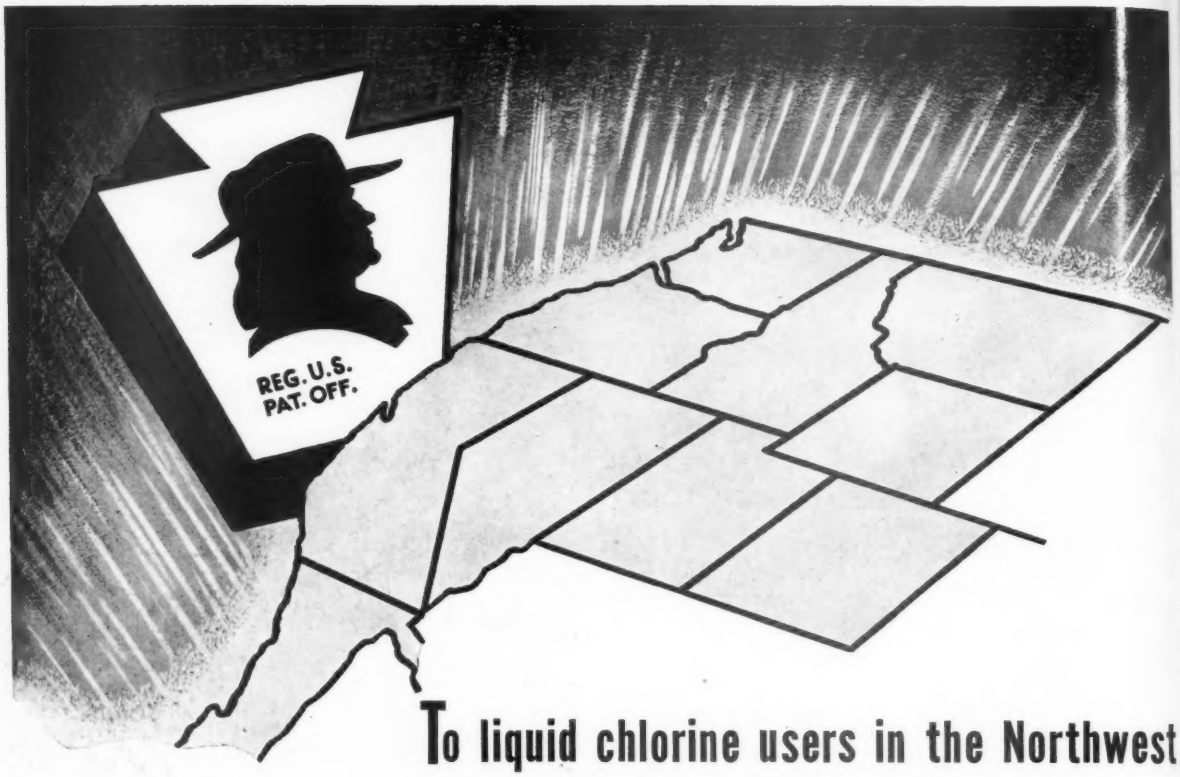
INDUSTRY



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Penn Salt's effective "before-and-after" service is one reason why many manufacturers, including the leading pulp and paper mills in the Pacific Northwest, turn to Penn Salt for liquid chlorine.

BEFORE liquid chlorine is shipped from our Tacoma plant, containers are thoroughly cleaned. Tank cars and cylinders are carefully overhauled and twice inspected for leaks after loading. You're assured of safe, clean and workable equipment.

AFTER Penn Salt Liquid Chlorine reaches your plant, our service engineers can be of real help to you . . . by periodically inspecting chlorine handling equipment . . . by demonstrating improved methods of connecting and running chlorine lines . . . by making suggestions as to the safest and most efficient ways to use liquid chlorine in your processes.

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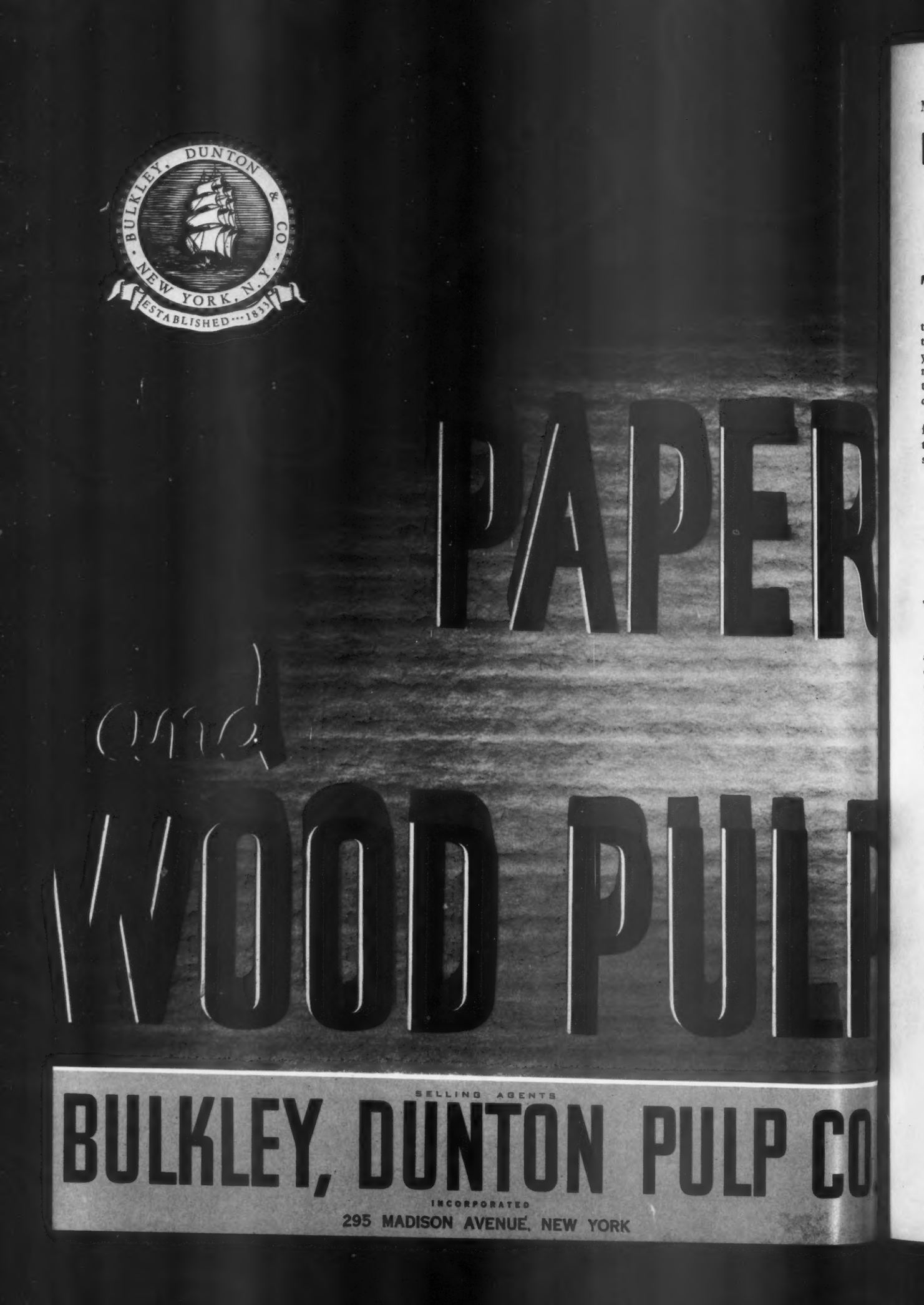
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Lessons From the War

1. **The Western Hemisphere should be self-sufficient in wood pulp.**
2. **Defense should be prepared now against the economic war that will follow the cessation of physical war.**

THE purpose of this Annual Review and Statistical Number is to bring together in one volume the essential data on the events of the pulp and paper industry of the year just gone so that the managements of the mills may be guided on the basis of past facts in making decisions concerning the future.

From the happenings of the eventful year 1940 two lessons for the future evolve, both tied in with Hemisphere defense:

1. The Western Hemisphere should be self-sufficient in wood pulp.
2. Defense measures should be taken now against the economic war that is certain to follow the cessation of physical warfare.

The Need for a Hemisphere Pulp Supply

● Wood pulp has not been generally recognized as being essential to defense although our modern life could not very well function without paper made from wood pulp. It is also essential for rayon and for smokeless powder production to augment the supply of cotton linters. An adequate supply has been taken for granted although as late as 1939 the United States imported 1,388,344 tons from Europe out of a total consumption of 8,650,423 tons or 16 per cent. The 1937 imports from Europe of 1,682,367 tons were 19.3 per cent of the total of 8,692,489 tons consumed in the country.

But these figures don't tell the whole story for they include the pulp produced by self-contained mills for their own use. The dependence of the pulp buying mills upon European pulp is shown by the following data. Out of 2,825,684 tons of wood pulp available on the United States market in 1939, 1,388,344 tons, or 49 per cent came from Europe.

In 1937 the available market supply was 3,005,929 tons and the European imports of 1,682,367 tons amounted to 55.9 per cent of the total.

Due to the blockade of the Baltic in April, 1940, the picture last year was different. Some 2,439,469 tons of pulp were available on the U. S. market and out of that total 397,656 tons, or 16.3 per cent came from Europe.

This country has been uncomfortably dependent upon Europe for wood pulp. It has not proved sound policy for the buying mills are feeling the pinch severely and will likely suffer still more before 1941 is ended. This situation was avoidable for the United States and Canada have more than enough timber to supply all of the wood pulp requirements of the Western Hemisphere perpetually. Special grades, bought in the past from Europe can be made on this side of the water now that the demand exists justifying the cost of developing them.

Due to Lack of Forest Policy

● The tight pulp situation of today in which the United States and Canada are hard put to produce enough pulp to supply their own mills, those of England and of South America, is due basically to the lack of a national forestry policy in the United States.

Great sums of money, taxpayers' money, have been spent in developing national forests, fighting fires, fighting insects and disease in order to increase our forests. But the key to the economic utilization of our forests on a perpetual basis has been ignored in all official reports. The key is markets — markets large enough to provide sufficient value to our forests to warrant their cultivation on a crop basis, just as is the case with other agricultural products such as wheat, cotton, corn, etc.

The latest analysis of the nation's forestry problems was presented to Congress on March 24, 1941, by the Joint Congressional Committee on Forestry, Senator John H. Bankhead, chairman and Representative H. P. Fulmer, vice chairman. The committee spent about a year and a half studying the problem. In making the report, Senator Bankhead said,

"The time is ripe for the establishment of a real forest economy in this country which, as an important segment of the broad agricultural economy, will put to constructive use one-third of our total land area.

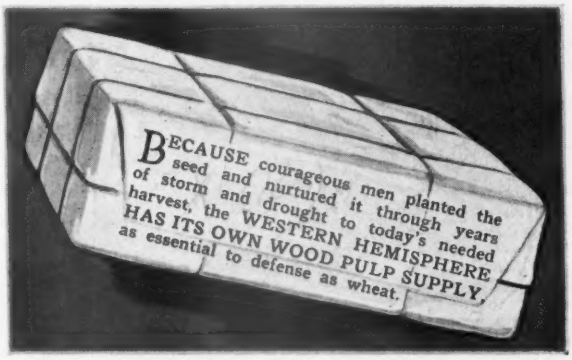
"No one today questions the worthwhileness of forest conservation—the wise use of timber and the other products and services of the forest.

"A forest economy is not a panacea for our economic and social ills. But, properly integrated with farm and range economies, it can help materially to increase rural employment and income, particularly in some of our most critical rural problem areas.

"The critical situation which threatens the physical and economic safety of the United States in a war-torn world accentuates the vital importance of a thorough and lasting solution of our forest problem.

"The variety and seriousness of the problems which must be overcome to make a forest economy arise in part from destructive forest exploitation; in part from natural, economic, and political circumstances more or less beyond the control of the individual owner.

"From the forest-resource standpoint, America is in transition from a philosophy of exploitation to one of planning and applying sustained yield management and orderly utilization. The knowledge necessary to accomplish this transition is as varied and complex as are the forest conditions and their economic and social relations."


BECAUSE courageous men planted the seed and nurtured it through years of storm and drought to today's needed harvest, the WESTERN HEMISPHERE HAS ITS OWN WOOD PULP SUPPLY, as essential to defense as wheat.

The Recommendations

● The Committee recommended "(1) **Forest Fire Protection**—Extension and intensification of cooperative protection against fire on private and state owned forest lands by increasing the authorization of the Clark-McNary Act for this purpose from two and one-half million dollars to ten million dollars, increasing the present appropriation by 2½ million dollars annually until the total authorization has been reached. Provided the respective states pass legislation providing for proper state, county and district fire protection and regulations governing minimum forestry practices to be administered as approved by the Secretary of Agriculture.

"(2) **Forest Insects and Diseases**—Extension of the Clark-McNary Act to provide for cooperative protection against forest insects and diseases on private and State-owned forest lands.

"(3) **Reforestation of Private Lands**—Extension of the Clark-McNary Act to authorize the furnishing of tree seed and seedlings to all land owners and authorization of such amounts as are necessary for this purpose.

"(4) **Forest Extension** — Continuation and expansion of the Norris-Doxey Cooperative Farm Forestry Act.

"(5) **Cooperative Sustained-Yield Units**—Legislation authorizing cooperative sustained yield units to enable sustained yield management of intermingled public and private forest lands conditioned upon management and wood practices approved by the Secretary of Agriculture.

"(6) **Forest Credits**—A forest credit system to make long-term low interest rate loans to private forest and naval stores operators through existing federal lending agencies. Loans to be conditional upon both sound forest practices and sound investment policy.

"(7) **Farm Forest Cooperatives**—Legislation authorizing cooperation with the States in the encouragement and development of farm forest cooperatives, including financial aid in building and operating forest industries and wood-working plants.

"(8) **Leases and Cooperative Agreements**—Legislation providing for leases and cooperative agreements with private forest land owners, communities, institutions and States.

"(9) **Forestry Research**—Extension and intensification of Forest Products Research and Forest Management Research providing that provision be made by the Secretary of Agriculture to get results of forestry research to the public-at-large, though existing State agencies, Agricultural Colleges and the public schools.

"(10) **State Forest Acquisition**—Amendment to the State Forest Acquisition Act, making it applicable to Institutions, Communities and Subdivisions of States. Also increasing the authorization to ten million dollars with appropriations at an increasing rate of two and one-half million dollars annually.

"(11) **National Forest Acquisition**—That National Forest Acquisition continues at its present rate and when possible be accelerated. That particular emphasis should be placed on blocking up present scattered areas of National Forest land before additional National Forests are established. That additional funds be appropriated annually to carry out this recommendation.

"(12) **Financial Tax Contributions to Local Governments**—Legislation authorizing an equitable system of financial contribution to local governments in lieu of taxes on forest land removed from the tax rolls through acquisition.

"(13) **National Forest Protection**—More adequate protection against fire, insects and diseases on National Forests.

"(14) **National Forest Management**—More intensified management of timber, forage, wildlife, recreation and watershed resources on National Forests.

"(15) **Forest Survey**—Amendment to Section 9 of the McSweeney-McNary Forest Research Act authorizing an annual appropriation of $750,000 for early completion of the Forest Survey on the United States.

"(16) **Pulpwood Investigation**—The investigation of apparent monopolistic purchasing of pulpwood by pulp and paper mills under a contract purchase system from farmers and other owners, price fixing of paper and other pulp products under trade practice rules and regulations including cost of distribution."

The committee's recommendations contain some long overdue changes and additions to the Federal forestry laws, but the principal problem, the solving of which will make the practice of forestry really profitable, is skipped over with a brief reference in Senator Bankhead's statement where he says, "The variety and seriousness of the problems which must be overcome to make a

UNITED STATES
WOOD PULP PRODUCTIONS BY REGIONS—1940

Source: United States Pulp Producers Association
(Tons of 2,000 Pounds)

Region	Total All Grades	Total Sulphite	Bleached Sulphite	Unbleached Sulphite	Total Sulphate	Bleached Sulphate	Unbleached Sulphate	Ground-Wood	Soda	Special & Off-Quality
West Coast	1,817,138	1,102,511	608,984	493,527	351,764	90,209	261,555	326,283	*	36,580
New England	1,316,447	545,947	374,689	171,258	*	*	*	650,039	120,461	———
Middle Atlantic	690,056	225,792	96,335	129,457	*	*	*	282,386	181,878	———
Lake States	1,320,012	600,782	418,024	182,758	274,172	58,067	216,105	374,325	70,733	**
South	3,837,347	113,968	113,968	———	3,098,064	404,724	2,693,340	327,967	168,928	128,420
Totals	**8,981,000**	**2,589,000**	**1,612,000**	**977,000**	**3,724,000**	**553,000**	**3,171,000**	**1,961,000**	**542,000**	**165,000**

*Included in Lake States' total to avoid disclosing one company's data.
**Included in Pacific States' total to avoid disclosing one company's data.
Source: As reported to the United States Pulp Producers Association and the Soda Pulp Manufacturers Association by 90 per cent of the Industry and estimated for the remaining 10 per cent.

UNITED STATES
WOOD PULP PRODUCTION BY REGIONS—1939

Source—United States Pulp Producers Association
(Tons of 2,000 Pounds)

Region	Total All Grades	Total Sulphite	Bleached Sulphite	Unbleached Sulphite	Total Sulphate	Bleached Sulphate	Unbleached Sulphate	Ground-Wood	Soda	Special & Off-Quality
West Coast	1,384,147	780,083	431,661	348,422	297,088	78,252	218,836	271,798	21,000	14,178
New England	1,070,927	436,117	281,713	154,404	(1)	———	(1)	523,666	110,026	1,118
Middle Atlantic	579,713	177,743	84,344	93,399	———	———	———	244,746	157,224	———
Lake States	1,154,741	541,008	397,233	143,775	231,376	46,035	185,341	333,283	45,000	4,074
South	2,927,472	35,049	35,049	———	2,473,536	307,713	2,165,823	76,507	131,750	210,630
Totals	7,117,000	1,970,000	1,230,000	740,000	3,002,000	432,000	2,570,000	1,450,000	465,000	230,000

[1] Included in Lake States to avoid disclosing individual mill's data.
Source: As reported to the United States Pulp Producers Association by 91 per cent of the industry and estimated for 9 per cent.

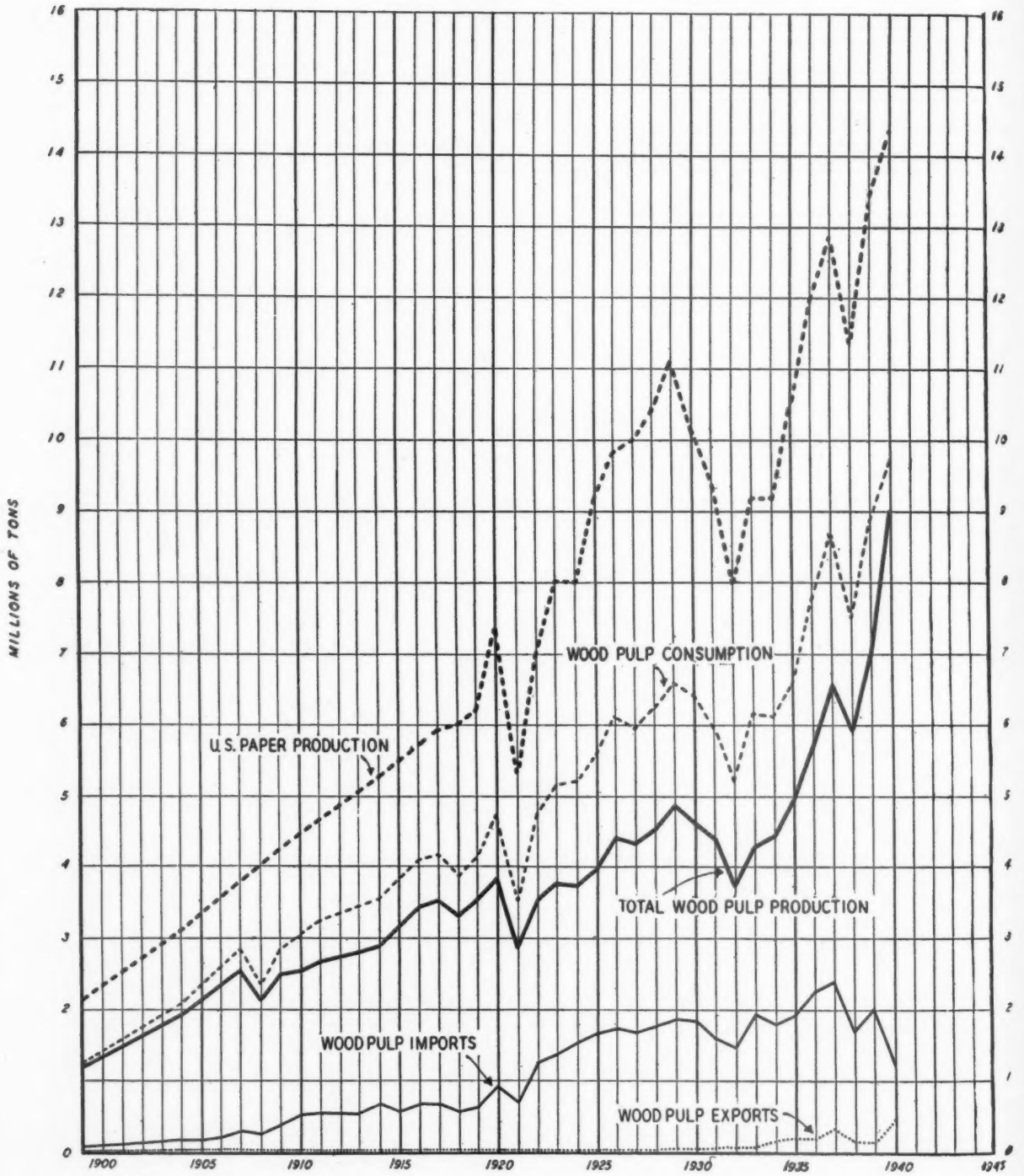
WOOD PULP TAKES A JUMP ... Rayon officially enters the American defense program with the release by the U. S. Army of photographs showing the new "jump suits" for parachute troops, which is said to be the first official service apparel employing rayon.

The fabric of the suits is "Tackle Twill," a smooth, tough fabric made of 50% "Tenasco" high strength viscose rayon yarn (in which wood cellulose is used as raw material), and 50% long staple cotton.

This fabric was selected for the parachutists' suits after tests had shown that it helps protect them from injury due to snagging on tree limbs or dragging when landing in a high wind. The smooth surface is said to help prevent fouling of the parachute shroud lines.

The army takes "Tackle Twill" from the gridiron where it has been widely used in football pants because of its smoothness and toughness. "Tackle Twill" is available to the public in raincoats, sports jackets and other utility apparel ... Photograph courtesy AMERICAN VISCOSE CORPORATION.

TOTAL WOOD PULP PRODUCTION, CONSUMPTION, IMPORTS AND EXPORTS AND TOTAL PAPER PRODUCTION OF THE UNITED STATES



Sources for Paper Production - U.S. Bureau of the Census except 1924, 1926 & 1940 estimated by American Paper & Pulp Association
for Pulp Production - 1899-1939 U.S. Bureau of the Census
1940 estimated by U.S. Pulp Producers Association
Imports & Exports - U.S. Bureau of Foreign & Domestic Commerce

United States Pulp Producers Association.

REGIONAL PERCENTAGES OF UNITED STATES WOOD PULP PRODUCTION
Total and by Grades in 1938, 1939 and 1940

Region	Sulphite			Sulphate			Groundwood			Soda			Total		
	1938	1939	1940	1938	1939	1940	1938	1939	1940	1938	1939	1940	1938	1939	1940
New England	23½	22.1	21	(1)	(1)	*	36½	36.9	33	....	23.6	22	16	13.6	14.5
Middle Atlantic	11	9	9	....	....	*	18½	16.8	14	....	33.8	34	8	8.1	8
Lake States	29	27.3	23	9	7.7	7.5	23½	22.9	19	....	9.6	13	18	16.2	14.5
South	2	1.7	4.5	81	82.3	83	4	5.2	17	....	28.3	31	39	41.1	43
West Coast	34½	39.5	42.5	10	9.8	9.5	17½	18	17	....	4.5	*	19	19.4	20
Total	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100

Cource: United States Pulp Producers Association.
1939: As reported to United States Pulp Producers by 91 per cent of the industry and estimated for the remaining 9 per cent.
[1]So as not to disclose individual mill's operation for 1938 and 1939 is included in the Lake States.
1940: As reported to United States Pulp Producers by 90 per cent of the industry and estimated for the remaining 10 per cent.
*Included in Lake States' total to avoid disclosing one company's data.

forest economy arise in part from natural, ECONOMIC, and political circumstances more or less beyond the control of the individual owner."

The economic problem is one of markets and the pulp and paper industry could play a far greater part than it is taking today in giving value to our forests if the domestic pulp industry were sufficiently protected against potential raids of low-priced European pulp so that it could expand to take care of United States and South American requirements.

The forestry problem was neatly summed up in the Fall of 1938 by A. G. T. Moore, manager, Department of Conservation, Southern Pine Association, who said, "THE MOST EFFECTIVE WAY TO ENCOURAGE THE GROWING OF TREES IS TO DEVELOP PROFITABLE REASONS FOR CUTTING THEM DOWN."

● The war has shown us the danger of depending upon Europe and the necessity for the Western Hemisphere to have an adequate pulp supply of its own. It can be easily developed and at the same time will contribute greatly toward a sound forestry policy in this country, which, in turn, will give greater value to our timber by increasing the markets for it.

A constructive, marketwise forestry policy should be adopted at the earliest possible moment for, should the war last say five years, the drain on this country's forest resources on the present hit and miss basis will greatly add to the difficulty of applying a sound program later.

But, we need not bother going ahead with a national forestry program unless we learn the other lesson from the war.

Defense Against Economic War

● Measures for defense in the economic war that is certain to come upon the establishment of "peace" are only secondary to measures for physical defense.

We can have no satisfactory business conditions in this country when the present war is ended, no living standards anywhere comparable to those of the past or present, unless we prepare to defend ourselves in the coming battle for trade.

Nor can we embark upon a national forestry program that will have any hope of success, any possibility of making the forests the source of livelihood for thousands of our people.

Looking over the production and consumption data for pulp, paper and paperboard in the United States for 1940, it is difficult to recall the conditions existing two years ago.

TOTAL UNITED STATES PRODUCTION OF WOOD PULP
By Grades—1925-1940
(Tons of 2000 pounds)

Year.	Total	Unbleached Sulphite	Bleached Sulphite	Total Sulphate	Groundwood	Soda	All Other
1925	3,962,217	790,510	612,576	409,768	1,612,019	472,647	64,697
1926	4,394,766	911,729	646,466	519,960	1,764,248	496,920	55,463
1927	4,313,403	872,411	680,288	603,253	1,610,409	487,478	59,564
1928	4,510,800	836,751	722,107	774,225	1,610,988	488,641	78,088
1929	4,862,885	848,754	839,953	910,888	1,637,653	520,729	104,908
1930	4,630,308	815,897	751,166	949,513	1,560,221	474,230	79,281
1931	4,409,344	675,859	740,812	1,034,291	1,449,240	374,054	135,088
1932	3,760,267	548,702	596,937	1,028,846	1,203,044	290,703	92,035
1933	4,276,204	601,102	726,473	1,259,351	1,197,553	457,790	33,935
1934	4,281,428	599,905	806,612	1,240,967	1,253,398	477,089	35,457
1935	5,032,299	634,947	944,620	1,467,749	1,355,819	485,162	144,002
1936	5,695,219	693,903	1,127,039	1,794,734	1,475,620	557,695	46,228
1937	6,713,576	791,575	1,348,669	2,139,087	1,600,667	507,548	326,030
1938	5,933,560	601,855	[1]1,004,621	2,443,057	1,333,308	395,307	155,418
1939	7,153,478	729,203	[2]2,217,249	2,962,657	1,444,875	441,565	357,929
1940	8,981,000	977,000	1,612,000	3,724,000	1,961,000	542,000	165,000

*Source: From 1925 through 1933 and for 1935 through 1939, U. S. Census. 1934 and 1940 data from United States Pulp Producers Association.
[1]Includes 151,068 tons of rayon and special chemical grades and 17,193 tons of superpurified pulp.
For 1937: "Superpurified" and "Rayon and Special Grades" combined amounted to 353,640 tons.
[1]Includes 151,068 tons of rayon and special chemical grades and 17,193 tons of superpurified pulp.
[2]Includes data for "Superpurified" and "Rayon and Special Grades" to avoid disclosing figures for individual establishments for 1939.

Reflection gradually brings them back into view for a moment's consideration. The production to capacity ratio of the American Paper & Pulp Association was around 80 per cent in May of 1939 but prices were generally unprofitable. For the week ending May 10th this year it was 100.9% and the week before for the first time the ratio had passed the 100% mark with 100.1%.

The domestic pulp industry two years ago this month was seriously affected by low priced European pulp, so much so that a number of the most modern Pacific Coast mills were discussing whether less money would be lost by continuing to operate or by shutting down. They were again battling the depreciation of the Swedish, Norwegian and Finnish currencies and plans were being made to make another effort to obtain relief through Federal legislation. The paper market, two years ago, was chaotic because the pulp market was chaotic.

Today the American pulp industry is running more than 100 per cent, stretching every mechanical muscle to produce an extra ton of badly needed pulp.

The scene has shifted. From a buyers' market where the converting mills had the edge through low cost foreign pulp, it is today a sellers' market and the self-contained paper mills have the advantage.

For the pulp industry of the United States the change has been fig-

UNITED STATES
WOOD PULP PRODUCTION, CONSUMPTION, IMPORTS, EXPORTS
1940

(In tons of 2,000 pounds)

Grade—	Consumption[1]	Production[2]	Imports	Exports
Sulphite:				
Bleached	1,746,459	1,612,000	352,916	218,457
Unbleached	1,285,623	977,000	*380,913	72,290
Total	**3,032,082**	**2,589,000**	**733,829**	**290,747**
Sulphate:				
Bleached	619,682	553,000	84,887	18,205
Unbleached	3,237,009	3,171,000	223,577	157,568
Total	**3,856,691**	**3,724,000**	**308,464**	**175,773**
Soda	542,757	542,000	10,763	10,006
Special and Off Quality	165,063	165,000	63	
Groundwood	2,130,747	1,961,000	171,513	1,766
TOTAL	**9,727,340**	**8,981,000**	**1,224,632**	**478,229**

Source: United States Pulp Producers Association.
[1]Estimated on the basis that consumption equals production and imports, minus exports.
[2]Estimated for 100 per cent of the industry by the United States Pulp Producers Association.
Import and Export data from the Bureau of Foreign & Domestic Commerce.
*Includes 5,913 tons of sulphite screenings.

UNITED STATES
WOOD PULP PRODUCTION, CONSUMPTION, IMPORTS, EXPORTS
1939

(In tons of 2,000 pounds)

Grade—	Consumption[1]	Production[2]	Imports[3]	Exports[3]
Sulphite—				
Bleached	1,619,883	1,217,249	474,109	71,475
Unbleached	1,349,481	729,203	661,193	40,915
Total	**2,969,364**	**1,946,452**	**1,135,302**	**112,390**
Sulphate—				
Bleached	524,420	424,453	108,252	8,285
Unbleached	3,069,555	2,538,204	546,167	14,816
Total	**3,593,975**	**2,962,657**	**654,419**	**23,101**
Soda	446,504	441,565	8,952	4,013
Special and Off Quality	357,929	357,929	0	0
Groundwood	1,672,643	1,444,875	227,768	0
TOTAL	**9,058,415**	**7,153,478**	**2,026,441**	**139,504**

Source: United States Pulp Producers Association.
[1]Estimated on the basis that consumption equals production and imports minus exports.
[2]Data from U. S. Census.
[3]Bureau of Foreign & Domestic Commerce, U. S. Department of Commerce.

SUMMARY FOR 1940 OF UNITED STATES WOOD PULP PRODUCTION, SHIPMENTS *and* STOCKS*

Tons of 2,000 lbs., air dry weight

	Production	Used	Shipments: Domestic Market	Shipments: Export	Stocks on Hand End of Period: 12/31/40	Stocks on Hand End of Period: 1/1/40
Total All Grades, 1940*	8,981,000	9,724,643	1,323,000	480,926	153,538	159,415
Total Sulphite	2,589,000	3,024,559	966,400	390,747	88,621	85,844
Total Bleached Sulphite	1,612,000	1,746,459	611,400	218,457	42,884	54,000
Rayon	288,500	287,241	157,700	115,204	.....	.....
Other	1,323,500	1,459,218	453,700	103,253	.....	.....
Total Unbleached Sulphite	977,000	1,278,100	355,000	72,290	32,971	31,693
Total Bleached Sulphate	553,000	619,682	75,400	18,205	3,910	15,794
Total Unbleached Sulphate	3,171,000	3,237,009	143,000	157,568	29,423	17,759
Total Soda	542,000	383,421	97,400	10,006	8,460	.....
Total Groundwood	1,961,000	2,130,747	40,800	1,766	35,890	37,182
Total Other Pulps	165,000	.....	.....	.....	.....	2,836

*Source: United States Pulp Producers Association.

SUMMARY FOR 1939 OF UNITED STATES WOOD PULP PRODUCTION, SHIPMENTS *and* STOCKS*

Tons of 2,000 lbs., air dry weight.

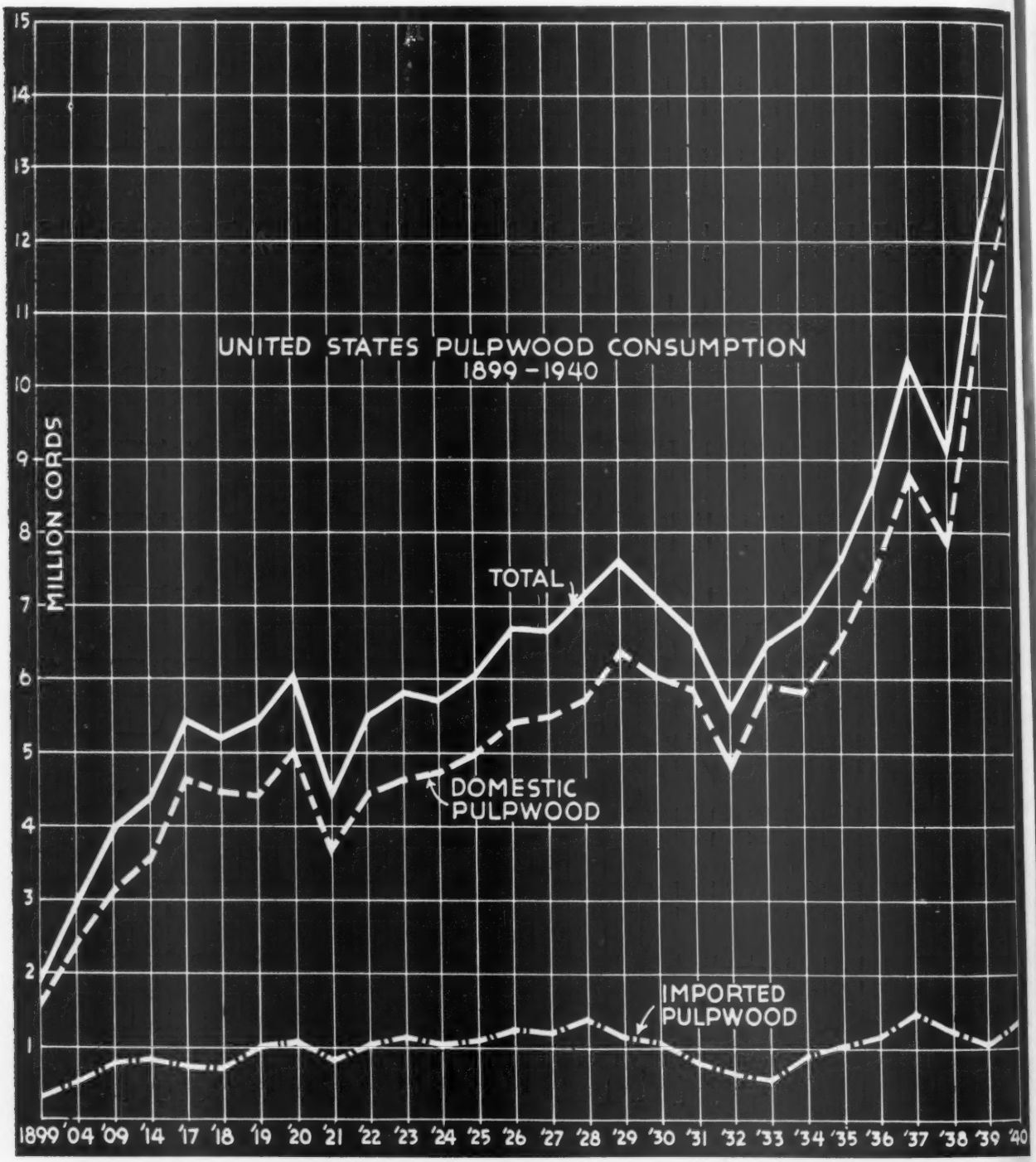
	Production	Used	Shipments: Domestic Market	Shipments: Export	Stocks on Hand End of Period: 12/31/39	Stocks on Hand End of Period: 1/1/39
Total All Grades, 1939[1]	7,117,000	9,003,937	894,930	139,504	159,415	166,687
Total Sulphite	1,970,000	2,992,912	628,885	112,390	85,844	86,452
Total Bleached Sulphite	1,230,000	1,632,634	426,447	71,475	54,151	54,660
Rayon	159,205	199,027	106,760	48,232	.....	7,281
Other	1,070,795	1,433,361	319,687	23,243	.....	47,379
Total Unbleached Sulphite	740,000	1,360,278	202,438	40,915	31,693	31,782
Total Bleached Sulphate	432,000	531,967	73,408	8,285	15,794	22,696
Total Unbleached Sulphate	2,570,000	3,101,351	61,955	14,816	17,759	17,370
Total Soda	465,000	469,939	86,591	4,013	.....	4,826
Total Groundwood	1,450,000	1,677,768	29,798	.....	37,182	34,218
Total[2] Other Pulps	230,000	230,000	14,293	.....	2,836	1,125

*Source: United States Pulp Producers Association.

[1]As reported to the United States Pulp Producers Association by 91 per cent of the industry's productive capacity and estimated for 9 per cent.

[2]Includes miscellaneous grades for which no classifications are shown.

WRAPPING DOUGLAS FIR PLYWOOD in Pacific Coast made kraft paper . . . The greatly expanded plywood industry has become a large user of kraft paper which provides protective packaging for its products.



uratively but not literally from rags to riches. The reverse may occur one of these days, for the war of trade will begin when the war of guns stops. And the United States is as unprepared to defend itself against economic war as it was two years ago. It is actually less well prepared for costs have risen, and the higher a nation's production costs the less its ability to defend itself in an open market against low cost products.

It is time now to put some additional locks on the barn door before any more horses are stolen through economic war when peace comes. But nothing is likely to be done for all thought is concentrated upon physical defense and all-out-aid to Britain. Such matters as amendments to the Anti-Dumping Act of 1921 to change the cost basis to American from foreign, and countervailing duties to minimize currency value fluctuations, are of no present interest to Congress. They have no "oomph" to arrest the attention of industry, the public nor of Congress.

Anyway industry appears too busy to push the matter beyond the stage of talking that we should plan now what to do when peace comes.

Suppose peace did come tomorrow. What would happen to the American pulp and paper industry and the people dependent upon it for a living? It is a question that none can answer specifically for there are too many "ifs" involved. We realize, however, that we are vulnerable to low cost foreign competition.

We do know that Sweden, Norway and Finland will make every effort to recapture as large a proportion as possible of their former pulp and newsprint market in the United States. We also know that their costs will be high for a time at least due to increased costs of raw materials, higher taxes, and added shipping costs. Cargo space will be scarce, too, which means the rate of $3.50

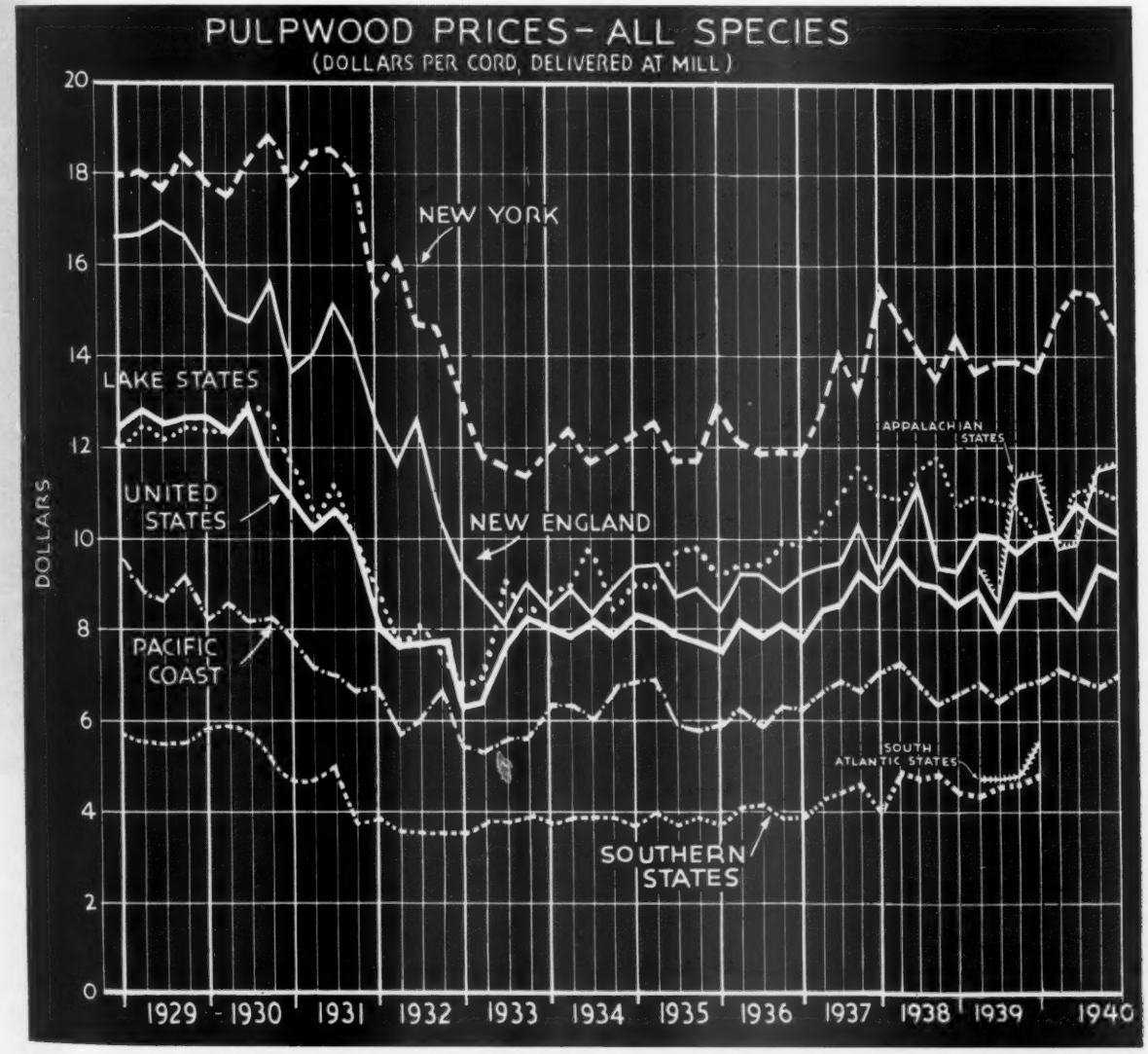
PULPWOOD PRICES F.O.B. MILL BY REGIONS
ALL SPECIES

(Dollars per Cord of 128 Cubic Feet)

1940

Quarter	U. S. Total	New England	New York	Lake States	Appalachian States	Pacific Coast
1st	$8.79	$10.12	$14.73	$10.08	$ 9.70	$7.04
2nd	8.23	10.77	15.50	11.01	9.80	6.89
3rd	9.47	10.38	15.35	11.11	11.38	6.68
4th	9.08	10.12	14.47	10.83	11.69	6.98

Source: American Paper and Pulp Association.
Data covering Atlantic and Southern States included under U. S. Total.



per ton from Sweden to Atlantic ports is not likely to be the rate again barring greatly enlarged government subsidies.

Whether the pulp and paper cartel headquarters will be in Berlin or Stockholm remains to be seen. It is in Berlin now and the announcement of plans for after the war regulation of export shipments came from Berlin last September. Whether control is in Berlin or Stockholm, an international trade seems inevitable.

Opinion in this country varies greatly as to how long the lag will be from the time an armistice is signed until Scandinavian pulp and paper competition again creates chaos in the American pulp and paper markets. Responsible guessers vary in their estimates that from one to ten years will elapse before the competition becomes serious. One man says Europe will need so much pulp for reconstruction, for a higher standard of living which he thinks Europeans will demand, that the

UNITED STATES
WOOD PULP PRODUCING CAPACITY BY REGIONS
1940
(In tons of 2,000 pounds)

Grade—	New England	Middle Atlantic	Lake States	Pacific	South	Total
Sulphite—						
Bleached	374,689	96,355	418,024	608,984	113,968	1,612,000
Unbleached	171,258	129,457	182,758	493,527	0	977,000
Total	545,947	225,792	600,782	1,102,511	113,968	2,589,000
Sulphate—						
Bleached	0	*	58,067	90,209	404,724	553,000
Unbleached	*	*	216,105	261,555	2,693,340	3,171,000
Total	*	*	274,172	351,764	3,098,064	3,724,000
Soda	120,461	181,878	70,733	*	168,928	542,000
Special and Off Quality	0	0	**	36,580	128,420	165,000
Groundwood	650,039	282,386	374,325	326,283	327,967	1,961,000
TOTAL	1,316,447	690,056	1,320,012	1,817,138	3,837,347	8,981,000

*Included in Lake States' total to avoid disclosing one company's data.
**Included in Pacific States' total to avoid disclosing one company's data.
Source: As reported to the United States Pulp Producers Association and the Soda Pulp Manufacturers Association by 90 per cent of the industry and estimated for the remaining 10 per cent.

UNITED STATES
WOOD PULP SHIPMENTS AND STOCKS
1940
(In Tons of 2,000 Pounds)

Grade—	Wood Pulp Shipments		Wood Pulp Stocks on Hand December 31, 1940	
	Domestic Market	Exports	For Own Use	For Market
Sulphite—	611,400	218,457	10,126	32,758
Bleached	355,000	72,290	14,717	18,254
Unbleached				
Total	966,400	290,747	24,843	51,012
Sulphate—				
Bleached	75,400	18,205	3,591	319
Unbleached	143,000	157,568	28,314	1,109
Total	218,400	175,773	31,905	1,428
Soda	97,400	10,006		
Special and Off Quality			1,309	7,297
Groundwood	40,800	1,766	35,519	371
TOTAL	1,323,000	478,292	93,576	60,108

Source: United States Pulp Producers Association.
Note: Stocks are only stocks of pulp produced by the reporting mills and these figures are not reported by 100 per cent of the industry in the U. S. No stocks of purchased pulp are included.

United States will be far less attractive to Scandinavian pulp producers than in the past. Others point out that regardless of German statements to the effect that gold will no longer be the basis of exchange, there will be a rush to export to this country to obtain badly needed dollars, and that the cost will not be counted for a time.

● Speculation can go on indefinitely and it serves only one constructive purpose, namely, to show us the economic roads that must be guarded if our people are to maintain a semblance of their present living standards. If Secretary of State Cordell Hull or his policies are in effect when the war ends, international competition in pulp and paper products will fall again with full force on domestic mills for he recently stated that there must be free trade after the war; that all barriers must be eliminated.

Among those who have studied the potential after-the-war trade competition it is pretty generally agreed that we ought to plan our protection now. Speaking before the Woodlands Section of the Canadian Pulp & Paper Association in Montreal, January 29th, Mr. E. W. Tinker, executive secretary of the American Paper & Pulp Association touched upon this subject in a hopeful tone.

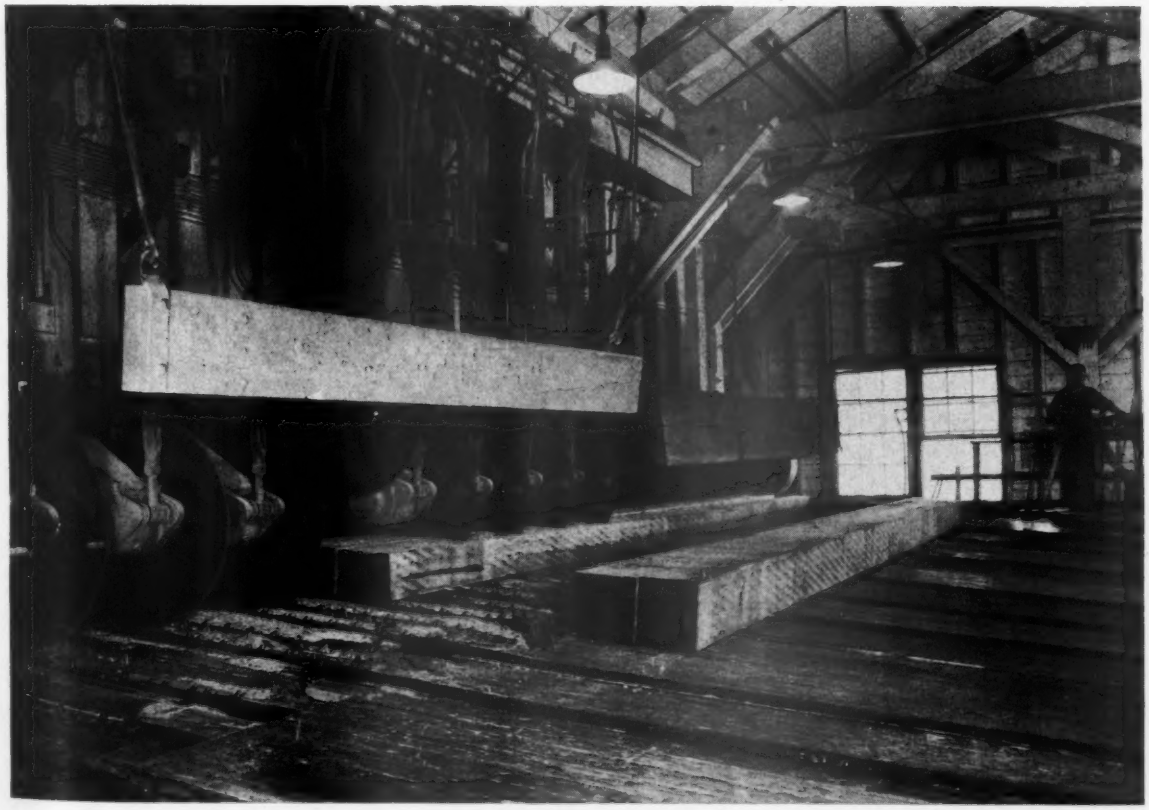
● Stated Mr. Tinker in part, "I would like to say a word if I may concerning the future. One cannot discuss the future without making predictions and I realize predictions are hazardous. The first prediction I would make on the basis of the situation as I see it, and I believe as the pulp and paper industry of the United States sees it, is that Britain will win the war. Laboring under this assumption then once again international trade channels will be open. When this occurs it seems probable that a fierce economic struggle will be indulged in, a struggle such as we have never known before.

"When this struggle takes place the pulp and paper industry of the United States and Canada will be in a particularly vulnerable situation. You and I know the underlying facts and I believe there is general appreciation of what may occur. It seems to me that the industry or the industry in cooperation with the government, can follow one of two courses. The first would be a haphazard drifting along with the tide, permitting matters to develop as they will with the almost inevitable outcome, and the other course would involve consideration by our statecraft and by our industrial skills and wisdom of a proper plan to at least protect domestic industry to a reasonable degree.

"I think there is some real hope in the situation because, in as far as the United States is concerned, not only the pulp and paper industry will be involved in this situation but all industry as well. It seems to me that the very tragic possibilities of the situation will require real governmental consideration and governmental action on the basis of a planwise program to give some protection to labor and to employment, if not capital, in the post-war period."

In the first place the United States should plan now to make the Western Hemisphere independent of Europe for all grades of wood pulp as a measure of hemisphere defense.

In the second place for defense of American jobs and for the successful establishment of a long range national forestry policy, the American markets for timber products should be made invulnerable to trade war attacks when physical peace is established and the battle for markets begins.



CANTS OF WESTERN HEMLOCK pass through the trimmer saws where they are cut into short lengths for the chippers.

Pulp, Paper and Paperboard Set New Records in 1940

Upward rate continues through first quarter of 1941—U. S. Pulp Production Rose 26.5 per cent over 1939—Paper Production Up 5.9%—Paperboard Production Gaines 7%—Pacific Coast Pulp Production 31.3% Higher in 1940

THE war in Europe and defense accelerated business in the United States brought the domestic production of pulp, paper and paperboard to new records in 1940.

With the invasion of Norway in April and the subsequent closing of the Baltic, imports of wood pulp from the Scandinavian countries declined to a mere trickle through Finland's Arctic port of Petsamo, and the pulp production of United States' mills jumped 31.3 per cent to 9,007,000 short tons from the 7,117,000 short tons produced in 1939.

The production of paper rose 5.9 per cent, according to the American Paper & Pulp Association's figures, to 7,822,000 short tons from 7,388,492 short tons (exclusive of paperboard). Paperboard production last year went up 7 per cent according to the National Paperboard Association's data to 6,550,000 short tons from 6,104,968 short tons in 1939. Paper and paperboard production together increased 6.5 per cent in 1940 over 1939 with a total of 14,372,000 tons against 13,493,476 tons.

These figures become all the more impressive when it is recalled that 1939 production set new records. The gain in paper and paperboard production in 1940 over 1938 was 1,534,997 tons or 11.9 per cent.

The increase in wood pulp production in 1940 over 1938 was amazing, the gain amounting to 3,073,440 tons for 51.8 per cent over the 5,933,560 short tons produced in 1938 according to the Census of Manufactures.

Coast Pulp Production Sets Record

● A new high production record was set in 1940 by Pacific Coast pulp mills with a total of 1,817,138 short tons, according to the figures of the United States Pulp Producers Association.

This was 432,991 short tons or 31.3 per cent larger than the 1,384,147 short tons produced in 1939. Compared with the 1938 production of 1,036,220 short tons the Pacific Coast mills in 1940 produced 75.4 per cent or 780,918 short tons more.

Compared with the previous record production in 1937 of 1,465,821 short tons, the Pacific Coast mills in 1940 produced 351,317 short tons or 23.9 per cent more.

With a sulphite pulp production of 1,102,511 short tons, the Pacific Coast mills produced 41.3 per cent more than they turned out in 1939 which totaled 780,083. The Coast's share of the sulphite production in 1940 was 42.5 per cent according to the United States Pulp Producers Association. This was the largest percentage of the total country's sulphite production to be manufactured on the West Coast and was 3 per cent higher than the 39.5 per cent recorded in 1939. The previous high was 40.8 per cent in 1937.

West Coast production of bleached sulphite pulp in 1940 totaled 418,024, an increase of 11,718 tons or 36.4 per cent over the 1939 production of 306,306 short tons. Thirty-eight per cent of the bleached sulphite pulp produced in the country in 1940 came from Pacific Coast mills.

Last year the Pacific Coast mills produced 493,527 short tons of unbleached sulphite pulp, 50.5 per cent of the entire country's output. This was 245,191 tons or 98.6 per cent greater than the 1939 production of 248,336 short tons.

Sulphate production stepped up on the Pacific Coast, too, with a 1940 production of 351,764 short tons, an increase of 110,176 tons or 45.7 per cent over the 1939 production of 241,588 short tons. The Coast mills produced 9.5 per cent of the sulphate pulp produced in this country in 1940 as compared with 9.8 per cent in 1939.

Bleached sulphate pulp produced on the West Coast last year amounted to 90,209 tons as compared with 52,440 short tons produced in the region in 1939. This was a jump of 37,769 short tons or 72 per cent. Unbleached kraft pulp produced amounted to 261,585 short tons, a gain of 72,407 short tons or 38 per cent over the 1939 output of 189,148 short tons.

PACIFIC COAST PULP PRODUCTION—1927-1940

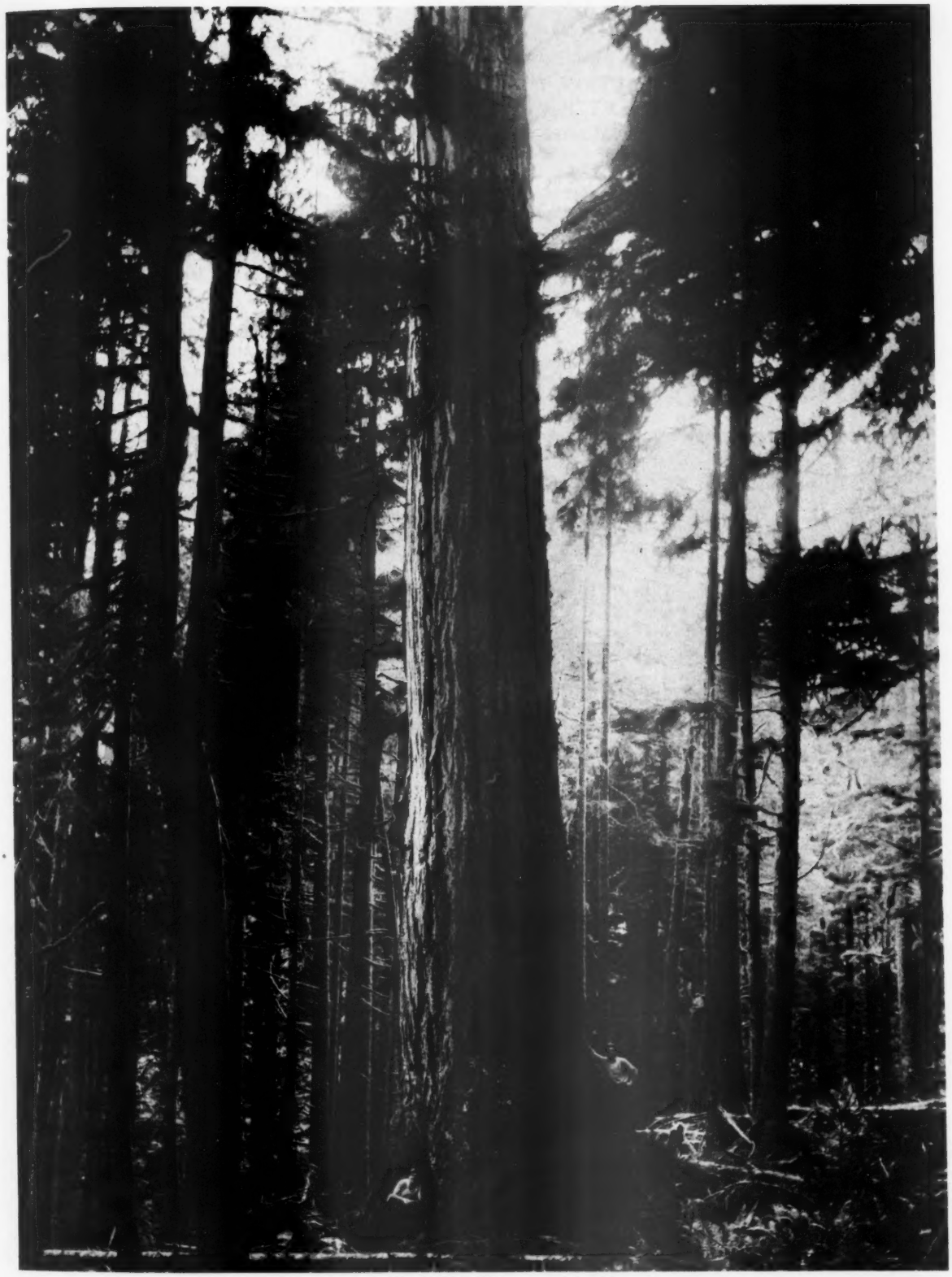
Pacific Coast States and British Columbia
(Tons of 2,000 lbs.)

	1927 Tons	1928 Tons	1929 Tons	1930 Tons	1931 Tons	1932 Tons	1933 Tons
Washington	268,349	349,107	523,948	566,137	580,016	420,529	583,770
Oregon and California	200,869	213,407	256,546	248,952	237,532	187,133	189,332
British Columbia	296,253	310,961	304,619	335,429	310,029	259,586	343,897
Total Pacific Coast	**775,471**	**873,475**	**1,085,113**	**1,150,518**	**1,127,577**	**867,248**	**1,117,999**

	1934 Tons	1935 Tons	1936 Tons	1937 Tons	1938 Tons	1939 Tons	1940‡ Tons
Washington	709,380	775,722	895,797	1,184,390	836,959	1,107,318	1,471,710
Oregon and California	240,167	262,221	302,634	338,802	250,788	270,829	363,428
British Columbia	383,818	377,522	416,433	425,558	242,020	321,132	438,500
Total Pacific Coast	**1,333,365**	**1,415,465**	**1,614,864**	**1,948,750**	**1,329,767**	**1,699,279**	**2,273,638**

Source—U. S. figures up to and including 1933, from U. S. Dept. of Commerce, Bureau of Census; B. C. figures from Dept. of Lands, Forest Branch; and Dominion Bureau of Statistics.

‡ Figures based upon United States Pulp Producers Association total for Oregon and Washington, excepting soda pulp. Addition of soda pulp production and division of products between Oregon and Washington estimated by Pacific Pulp & Paper Industry. No wood pulp production in California.



LARGEST LIVING DOUGLAS FIR . . . Recently discovered by Les Lloyd, Forester for the Hawley Pulp & Paper Company, on the company's timberlands in Clatsop County, Oregon, not far from Seaside, the fir is said by Forest Service men to be the largest Douglas fir yet reported.

The diameter at 4½ feet above the ground is 15½ feet; the height to the broken top, which is more than two feet in diameter, is 210 feet; height to lowest limb, 108 feet. Without the top the tree is estimated to contain 105,650 board feet of timber.

The age of this giant is estimated at 1,200 years. It was of considerable size when Columbus discovered America and was a big tree when the Lewis & Clark Expedition wintered at Fort Clatsop in 1805-1806. A movement is under way for preserving the tree in a state park. Photograph by Leo A. Isaac, Forest Service.

U. S. WOOD PULP PRODUCTION, IMPORTS, EXPORTS FIRST QUARTER 1941

(Tons of 2,000 Pounds)

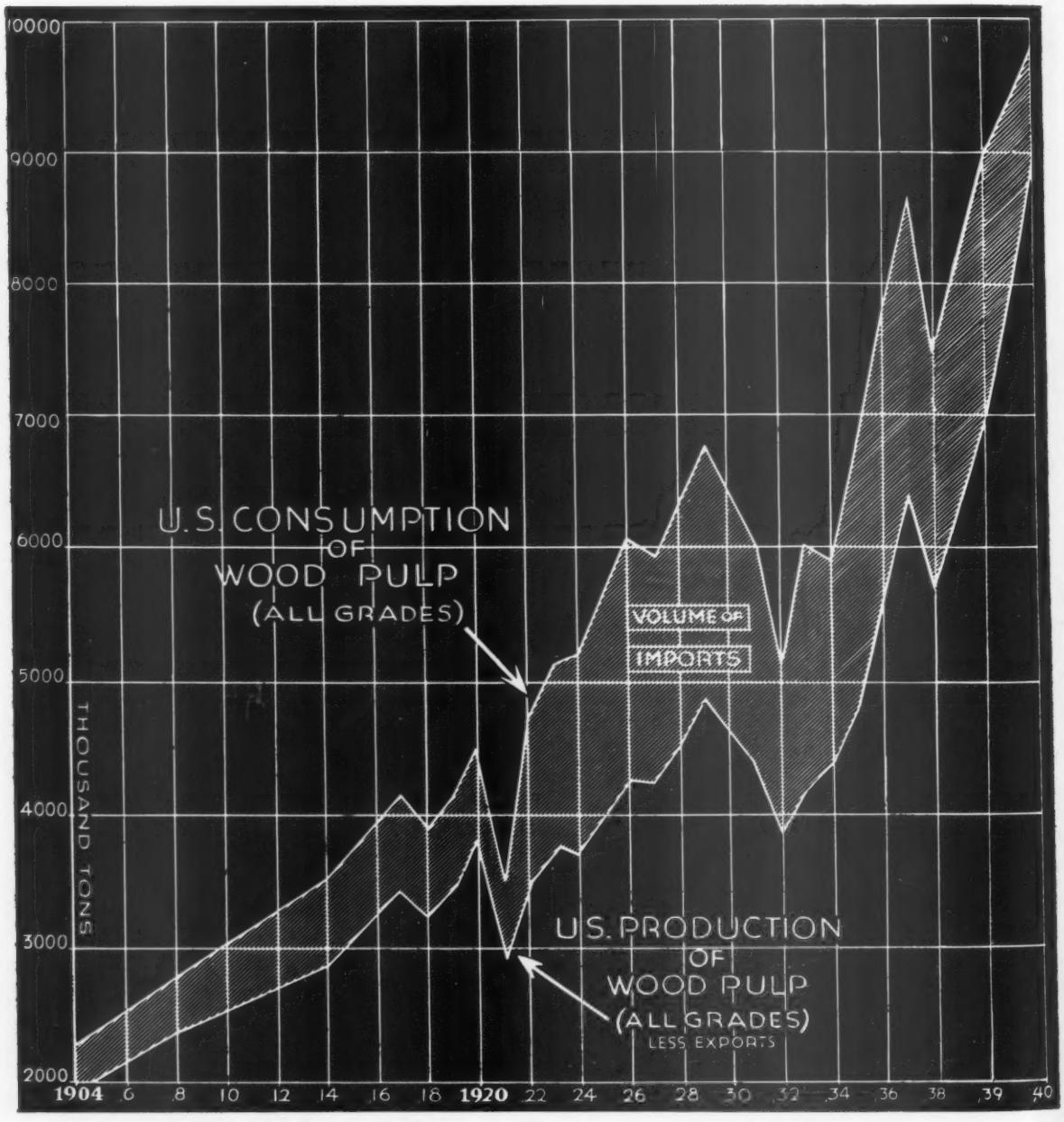
	Production	Imports	Exports
Groundwood	311,633	31,425	.....
Sulphite:			
Bleached	386,763	84,242	31,758*
Unbleached	254,961	62,918	18,493
Sulphate:			
Bleached	164,004	16,883	3,087
Unbleached	824,271	28,734	32,093
Soda	130,078	3,079	939
Total	**2,071,710**	**227,281**	**86,370**

*Includes 13,272 tons of Rayon and Special Chemical Grades.
Source: U. S. Department of Commerce, Bureau of Foreign & Domestic Commerce.

Groundwood production on the Pacific Coast rose 54,485 short tons or 20 per cent from 271,798 short tons in 1939 to 326,283 short tons in 1940.

Washington Production Up Third

● Of the total of 1,817,138 short tons of wood pulp reported by the United States Pulp Producers Association as having been produced on the Pacific Coast in 1940, it is estimated by this journal that 1,471,710 short tons were produced in Washington. The association does not break down the total into state production and the Bureau of Census



data for 1940 will not be available for approximately two years. At this writing in May 1941 the 1939 census data on pulp production by states is not yet available. Hence it is necessary to estimate production on the basis of known capacities.

U. S. Pacific Coast Wood Pulp Production, 1923-1940

	Tons of 2,000 lbs.
1923	299,596
1924	309,433
1925	322,594
1926	378,005
1927	449,218
1928	562,514
1929	780,494
1930	815,089
1931	817,548
1932	607,662
1933	773,102
1934	935,033
1935	1,011,421
1936	1,198,431
1937	1,523,192
1938	1,087,747
1939	1,384,147
1940	1,835,138

●

British Columbia Wood Pulp Production, 1923-1940

	Tons of 2,000 lbs.
1923	217,076
1924	216,243
1925	230,733
1926	259,504
1927	296,253
1928	310,961
1929	304,619
1930	335,429
1931	310,029
1932	259,586
1933	343,897
1934	383,818
1935	377,522
1936	416,433
1937	425,558
1938	242,020
1939	321,132
1940	438,500

On the basis of a pulp production in Washington in 1940 of 1,471,710 short tons, the increase over 1939 (also estimated) would be 364,392 short tons or 33 per cent.

When the production of pulp in Washington last year is compared with the Census of Manufacturing figures for 1938, the gain is astonishing. The 1940 estimated production figure of 1,471,710 short tons is 634,751 short tons or 75.8 per cent greater than the 836,959 short tons reported by the Census of Manufactures for 1938.

Comparing the 1940 production in Washington with that of 1939 when the total wood pulp produced was 523,948 short tons, the gain is even more impressive, 947,762 short tons or 179 per cent. Putting it another way, the wood pulp production in Washington in 1940 was nearly three times the production in 1929.

The progress of wood pulp production in Oregon has been less

BRITISH COLUMBIA

Review of Pulp and Paper Production

1919-1940

	—PULP—			—PAPER—	
	Sulphite	Sulphate	Tons Groundwd	News Print	Other
1940				262,144	68,428
1939				216,542	50,870
1938				176,639	39,348
1937				264,000	53,000
1936				276,710	41,443
1935				262,123	33,287
1934	130,176	15,630	209,359	267,406	26,777
1933	122,265	15,715	185,451	237,107	23,492
1932	85,419	10,889	161,502	205,050	24,051
1931	124,521	11,744	170,432	217,562	17,709
1930	130,462	13,055	172,539	224,928	20,446
1929	112,925	15,647	151,066	201,009	19,492
1928	120,413	15,050	170,005	225,477	15,960
1927	119,005	13,700	163,548	214,010	13,745
1926	108,381	15,000	136,123	176,924	10,389
1925	92,514	16,856	121,363	148,201	9,261
1924	89,839	14,403	112,001	136,281	9,653
1923	99,878	9,932	107,266	142,928	7,709
1922	86,894	9,674	100,759	124,639	7,945
1921	68,502	6,519	89,725	110,176	6,934
1920	92,299	16,380	108,655	136,832	9,792
1919	80,347	9,473	99,769	123,607	7,202

	Total Production All Grades—Tons		Estimated value
	Pulp	Paper	of production:
1940	438,500	330,572	
1939	321,132	272,117	$18,690,573
1938	242,020	222,305	14,562,479
1937	425,558	320,920	21,625,305
1936	416,433	320,555	19,012,369
1935	377,522	299,816	10,708,145
1934	383,818	299,502	10,347,123
1933	323,431	260,599	10,852,000
1932	259,586	228,075	11,156,000
1931	310,029	244,397	13,508,000
1930	316,056	245,374	16,520,000
1929	279,638	220,501	14,400,000
1928	305,468	241,437	16,755,000
1927	296,253	227,755	18,505,000
1926	259,504	187,313	16,315,000
1925	230,733	157,462	14,466,000
1924	216,243	145,934	13,938,000
1923	217,076	150,637	15,018,000
1922	197,327	132,584	12,590,000
1921	164,746	117,110	13,500,000
1920	217,334	146,624	
1919	189,589	130,809	

Source—British Columbia, Department of Lands, Report of the Forest Branch.

PULP WOOD CONSUMPTION—1927-1940

Pacific Coast States and British Columbia

	1927 Cords	1928 Cords	1929 Cords	1930 Cords	1931 Cords	1932 Cords	1933 Cords
Washington	455,664	651,657	956,132	1,000,001	1,025,878	688,326	1,094,852
Oregon and California	267,233	308,264	340,745	351,053	319,876	265,470	241,841
British Columbia*	364,000	383,008	352,444	373,397	363,688	304,185	375,450
Total Pacific Coast	1,076,899	1,342,929	1,649,321	1,724,451	1,709,442	1,257,981	1,712,143

	1934 Cords	1935 Cords	1936 Cords	1937 Cords	1938 Cords	1939 Cords	1940‡ Cords
Washington	1,203,516	1,324,356	1,509,340	2,169,717	1,450,016	1,915,660	2,554,213
Oregon and California	322,287	369,327	423,839	511,419	342,229	468,534	621,379
British Columbia*	428,287	421,393	452,143	465,478	259,545	364,611	495,871
Total Pacific Coast	1,954,092	2,115,076	2,385,322	3,146,614	2,051,790	2,748,805	3,671,463

Source—U. S. figures from U. S. Dept. of Commerce, Bureau of Census; B. C. Figures from Dept. of Lands, Forest Branch; and Dominion Bureau of Statistics.

*British Columbia figures prior to 1928 are not shown separately and are estimated on basis of 1.23 cords of wood consumed per ton of wood pulp produced.

‡Estimated.

spectacular in both volume and percentages. It is estimated that Oregon produced 363,428 short tons of pulp in 1940, a gain over 1939 of 92,590 short tons or 34.2 per cent. When the 1940 production is compared with the 1938 Census of Manufactures figure of 250,788 short tons, the gain is 112,640 tons or 44.9 per cent.

In the period from 1929 through 1940, Oregon increased pulp production from 256,546 short tons to the above figure of 363,428 short tons in 1940, a gain of 106,882 short tons or 42.6 per cent.

British Columbia Production Rises

● According to the Forest Branch, Department of Lands, Province of British Columbia, 438,500 short tons of wood pulp was produced within the province in 1940. This was an increase of 117,368 short tons or 36.5 per cent. Comparing the 1940 total with the production of 242,020 short tons produced in 1938 the gain is 196,480 short tons or 81 per cent.

In 1929 British Columbia produced 304,619 short tons of pulp. The 1940 production of 438,500 short tons was 133, 881 short tons or 44 per cent greater than the production in 1929.

The production of wood pulp in

Wood Pulp Prices--1926 to 1940

WOOD PULP PRICES IN U. S.

Year—	Domestic Bleached Sulphite	Foreign Bleached Sulphite	Foreign Strong Sulphite	Swedish Kraft	Domestic Bleached Soda
1928	$80	$68 –$78	$48–$55	$50 –$55	.....
1929	75– 80	68 – 77	50– 56	47 – 50	.....
1930	65– 75	57 – 68	42– 56	30 – 47	.....
1931	45– 65	43 – 57	32– 43	28 – 31	.....
1932	35– 45	35 – 43	27– 32	25 – 30	.....
1933	35– 60	35 – 57	27– 43	25 – 37	$40–$50
1934	55– 60	55 –	42–	33 – 38	50
1935	50– 55	50 – 55	37– 42	33 – 36	50
1936	50– 53	50 – 65	38– 50	36 – 50	50– 54
1937	54– 70	65 – 95	50– 75	47 – 76	54– 65
1938	60– 50	90 – 50	70– 36.50	47.50– 31.50	58– 51
1939	50	47.50– 60	36– 50		
1940*	60– 72.50	60 – 82.50	50– 72.50	42.50– 72.50	58– 66
Monthly price movement, 1940—					
January	$60	$60 –$67.50	$50 –$57.50	$42.50–$53.50	$58
February	60	65 –	57.50–	53.50–	58
March	60	65 –	57.50–	53.50–	58
April	61.50	65 – 74	57.50– 65	53.50– 61.50	58
May	61.50	74 –	65 – 72.50	61.50– 72.50	58
June	61.50	82.50–	72.50–	72.50–	58
July	72.50	82.50–	72.50–	72.50–	66
August	72.50	82.50–	72.50–	72.50–	66
September	72.50	82.50–	72.50–	72.50–	66
October	72.50	82.50–	72.50–	72.50–	66
November	72.50	82.50–	67.50–	72.50–	66
December	72.50	82.50–	67.50–	72.50–	66

*The price of domestic unbleached sulphite was $50 per short ton ex dock Atlantic seaboard during the first quarter, $52.50 during the second quarter and $63.50 per ton during the third and fourth quarters.

British Columbia set a new record being 12,942 short tons or 3 per cent larger than the previous high production of 425,558 short tons produced in 1937.

National Pulp Production

● While United States pulp production rose 31.3 per cent as a whole in 1940 over 1939, the sulphites increased 31.4 per cent with 2,589,000 short tons, 619,000 short tons more than the 1939 production of 1,970,000 short tons.

Bleached sulphite pulp production last year amounted to 1,612,000 short tons against 1,230,000 short tons in 1939, a gain of 382,000 tons or 31 per cent.

Unbleached sulphite pulp production in 1940 totaled 977,000 short tons, 237,000 tons or 32 per cent more than the 740,000 short tons produced in the entire country in 1939.

Sulphate production increased 24 per cent last year with a total of 3,724,000 short tons or 722,000 short tons more than the 3,002,000 short tons produced in 1939. Bleached sulphate pulp produced in 1940 aggregated 553,000 short tons, 28 per cent or 121,000 short tons more than the 432,000 short tons produced in 1939.

Unbleached kraft with a total production of 3,171,000 short tons last year, was 23.3 per cent or 601,000 short tons greater than the 1939 production of 2,570,000 short tons.

Soda pulp production rose 16.5 per cent with a 1940 production of 542,000 short tons, 77,000 larger than the 1939 total of 465,000 short tons.

Groundwood pulp produced in the United States in 1940 in the amount of 1,961,000 short tons, was 511,000 tons or 35.2 per cent greater than the 1939 production of 1,450,000 short tons.

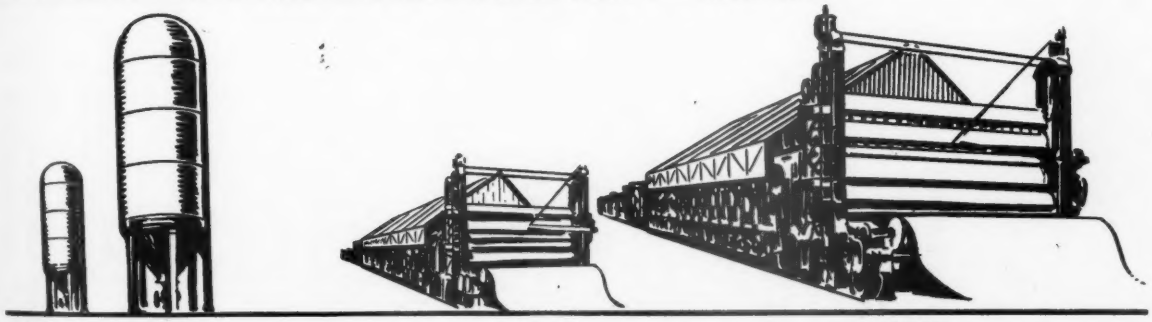
Wood Pulp in 1940

● The past year was a good one for American and Canadian wood pulp producers for events in Europe gave them a chance to make a profit. But the average of pulp mill profits and losses for the last five years still show, for the most part, a low return on the capital invested.

An intelligent price policy was set by leading producers on both sides of the line and followed by almost the entire industry. After the Baltic was closed in April and the final shipments from Scandinavia arrived around the first of May, the pulp buying mills were dependent entirely upon American and Canadian sources of supply and upon stocks of European pulp purchased in advance.

With the market to themselves the Americans and Canadians prevented it from running away as could eas-

COMPARATIVE GROWTH
Of PACIFIC COAST PULP and PAPER INDUSTRY — 1923-1940



1923 1940 1923 1940

Total Daily Capacity All Grades of Pulp
1923—2,045 tons
1940—7,878 tons. Increase 285%.

Total Daily Capacity All Grades of Paper and Board
1923—2,056 tons
1940—5,671 tons. Increase 176%.

PULP AND PAPER CAPACITIES OF PACIFIC COAST MILLS

Showing principal grades manufactured and capacities in tons per 24-hour day

Name of Mill	Location	—PULP— Mechanical	Unbleached Sulphite	Bleached Sulphite	Unbleached Sulphate	Bleached Sulphate	Soda	—PAPER— News	Sulphites	Sulphates	Book	Board	Others	REMARKS
BRITISH COLUMBIA														
British Columbia Pulp & Paper Co.	Woodfibre			200										Bleached sulphite of rayon and paper grades.
British Columbia Pulp & Paper Co.	Port Alice			150										
Pacific Mills, Ltd.	Ocean Falls	230	90		135			240	47	105				News, Kraft and Sulphite Wrapping, fruit wrap, tissues, etc.
Powell River Co., Ltd.	Powell River	585	155					700						Newsprint, unbleached sulphite pulp, and groundwood pulp.
Sidney Roofing & Paper Co.	Victoria	10										30	10	Roofing and boards.
Vancouver Kraft Mills, Ltd.	Port Mellon				85									
Westminster Paper Mills, Ltd.	New Westminster								25					Kraft and sulphite wrapping; second sheets; fruit wraps; tissues; specialties.
WASHINGTON														
Anacortes Pulp Co.	Anacortes		80											
Berkheimer Mfg. Co., J. E.	Tacoma												1	Rag roofing, etc.
Columbia River Paper Mills	Vancouver	30		150					150					Unbleached and bleached sulphite and groundwood papers; wrapping; newsprint; fruit wraps; tissues.
Crown Willamette Paper Co. (Division of Crown Zellerbach Corp.)	Camas	90	300	150	170	‡			240	170				Sulphite, sulphate and groundwood specialties, tissue, M. F. book, etc.
Everett Pulp & Paper Co.	Everett						60				70			Book, railroad, writing, school supplies.
Everett Pulp & Paper Co.	West Tacoma										(35)			Products same as Everett mill (idle).
Fibreboard Products Inc.	Port Angeles	30	65									85		Box and container board, pulp board.
Fibreboard Products Inc.	Sumner											75		White patent coated board, bottle cap bd.
Grays Harbor Pulp & Paper Co.	Hoquiam								50					Box and container board, coated board.
Rayonier Inc., Grays Harbor Division	Hoquiam			270										Sulphite bonds, writing, specialties.
Inland Empire Paper Co.	Millwood	100	33					65	50					Rayon and paper grades.
Longview Fibre Co.	Longview	100			330	‡				210		220		News, wrapping, poster, sulphite specialties, etc.
National Paper Products Co. (Division of Crown Zellerbach Corp.)	Port Townsend				285					165		120		Board, wrapping, bags, container, boxes.
Rayonier Inc., Port Angeles Division	Port Angeles			225										Kraft liner board, wrapping, bag paper.
Pacific Coast Paper Mills	Bellingham								21					Rayon and paper grades.
Pacific Paperboard Co.	Longview	30										60		Toilet Tissues, Towels, etc.
Rayonier Inc., Shelton Division	Shelton			300										All kinds of boards.
Soundview Pulp Co.	Everett			500										All Rayon grade, includes 140 tons produced by Tacoma Division.
Puget Sound Pulp & Timber Co.	Bellingham		450											
Rayonier Inc., Tacoma Division	Tacoma		140											Entire output bleached and dried at Shelton.
St. Regis Paper Co. (Kraft Pulp Division)	Tacoma					225								
Tumwater Paper Mills Co.	Tumwater	(20)							(50)					Mill idle.
Washington Pulp & Paper Corporation (Division of Crown Zellerbach Corp.)	Port Angeles	310	60					350						Newsprint.
Weyerhaeuser Timber Co. (Pulp Division)	Longview			235										
Weyerhaeuser Timber Co. (Pulp Division)	Everett		240											
OREGON														
Crown Willamette Paper Co. (Division of Crown Zellerbach Corp.)	Lebanon		45						45					Wrapping, cartridge, powder, printed wrapping and semi-parchmentized wrappings.

OREGON														
Crown Willamette Paper Co. (Division of Crown Zellerbach Corp.)	Lebanon		45						45					Wrapping, cartridge, powder, printed wrapping and semi-parchmentized wrappings.
Crown Willamette Paper Co. (Division of Crown Zellerbach Corp.)	Oregon City	60												
Crown Willamette Paper Co. (Division of Crown Zellerbach Corp.)	West Linn	440	110					300	25				45	News, Wrapping, Poster, Sulphite specialties.
Fir-Tex Insulating Board Co.	St. Helens												*	Wood fibre insulating board. Daily capacity 250,000 sq. ft.
Lloyd A. Fry Roofing Co.	Portland													Asphalt roofing, roofing felts.
Hawley Pulp & Paper Co.	Oregon City	205	105					150	100					News, Sulphite Wrapping, Lightweight Papers, Tissue, Cover, etc.
Oregon Pulp & Paper Co.	Salem		20	110					120					Sulphite Bonds, Glassine, Greaseproof.
Pacific Roofing Co.	Portland												90	Roofing.
St. Helens Pulp & Paper Co.	St. Helens				150	‡				140				Kraft wrapping, bag, fruit wraps, towels,
Coos Bay Pulp Corporation	Empire		75											
Spaulding Pulp & Paper Co.	Newberg		80											
CALIFORNIA														
California-Oregon Paper Mills	Los Angeles								40	40				Wrapping, fruit wrap, vegetable parchment, tissues.
Certain-teed Products Corp.	Richmond												45	Roofing, felts, mulching and insulating papers.
Fernstrom Paper Mills	Pomona								50					Fruit wraps, wrapping, tissues, napkins,
Fibreboard Products Inc.	Los Angeles (Vernon Div.)											150		Box board, container, patent coated board, bristol, bottle cap, etc.
Fibreboard Products Inc.	Stockton											250		Boxes, cartons, cardboard specialties.
Fibreboard Products Inc.	Los Angeles (Sunset Div.)											8		Binder board and miscellaneous board.
Fibreboard Products Inc.	Antioch											200		Container board, tag, white patent coated, folding and set-up corrugated straw.
Lloyd A. Fry Roofing Co.	Compton												30	Asphalt Roofing, Roofing Felts.
Johns-Manville Corporation	Pittsburg												30	Asbestos Paper.
El Rey Products Co.	Los Angeles												33	Roofing, car lining, industrial flooring.
Pacific Coast Pulp & Paper Co.	Richvale													Rice straw pulp produced by special process. Not included in soda pulp total.
Paraffine Cos., Inc.	Emeryville						5						120	Roofing and felts, floor coverings.
Pioneer Division, Flintkote Company (Formerly Los Angeles Paper Mfg. Co.)	Los Angeles											150	70	Roofing felts and boards, patent coated board, corrugated board, pasted board.
U. S. Gypsum Co.	Los Angeles (Southgate)											70	50	News lined chip board and roofing felts.
COLORADO														
Central Fibre Products Co. Successors to Colorado Pulp & Paper Co.	Denver	15										50		Box, liner, chip boards, wall boards, etc.
HAWAII														
Olaa Sugar Company	Olaa												(28)	Mulch Paper (Mill Idle).
Hawaiian Cane Products Co.	Hilo													Insulating board from bagasse. (300,000 sq. ft. ½ in. thick per day).
Total daily capacities		2235	1908	2290	1070	225	65	1805	963	830	105	1468	535	

Total Pulp Capacity—All Grades	7,878
Total Paper Capacity—All Grades	5,671

*Totals do not include 250,000 sq. ft. of insulating board.
Total Pacific United States Capacity—Pulp, 6,238 tons; Paper, 4,514 tons.
Total Pacific Canadian Capacity Pulp, 1,640 tons; Paper, 1,157 tons.
†Tacoma Division production not included in unbleached sulphite total.
‡Production of Bleached and Semi-Bleached Sulphate is variable.

ily have happened. They kept in mind the necessity of maintaining their customers in a competitive position with self-contained pulp and paper mills and at the same time advancing the prices enough to take care of increased costs and to provide a profit to themselves.

Despite the accelerated demand for American and Canadian pulp which sprang up overnight when war began September 1, 1939, the pulp prices remained the same until the end of that year, although they were too low.

At the start of 1940 prices were advanced to $60 per ton for bleached sulphite and $50 per ton for unbleached sulphite ex dock Atlantic ports, from $50 and $40 respectively during the last quarter of 1939.

These first quarter prices turned out to be cheaper for the buyers than the low priced European pulp they had contracted for around June of 1939. In January and February of 1940 some American mills cancelled orders for Scandinavian pulp because they could buy American pulp cheaper.

Back in June of 1939 foreign pulp was sold at very low prices for delivery in 1940. For example, it was known that bleached sulphite was contracted for at as low a figure as $42. But the war added costs for freight, war risk insurance, coal, chemicals, etc., which had to be paid by the buyer under the Force Majeure clause of the contract, running from $33 to $38 per ton. These additional costs were in effect at the close of 1939 and early in 1940. So the $42 bleached sulphite plus, say a $33 upcharge, cost the buyer $75 per ton laid down on the Atlantic seaboard. This was $15 per ton higher than the cost of domestic bleached sulphite.

The above figures serve to picture the reversing of positions of American and Scandinavian pulps as to cost.

(Continued on page 27)

THE PACIFIC COAST PULP & PAPER INDUSTRY

Census of Manufactures for 1939

PACIFIC COAST— Washington, Oregon, California	Employees	Wages & Salaries	Cost of Materials, etc., Fuel, Purchased Electrical Energy and Contract Work	Value of Products	Value Added by Manufacture
PACIFIC COAST—					
Pulp Mills	5,367	$ 8,643,233	$23,832,625	$43,632,270	$19,799,645
Paper and Paperboard Mills	7,736	12,037,540	34,990,332	67,158,141	32,167,809
Paperboard Containers and Boxes not elsewhere classified	2,878	4,102,049	10,867,906	20,113,467	9,245,561
Paper Bags, except those made in paper mills	334	372,186	1,784,180	2,829,174	1,044,994
Roofing, built-up and roll; asphalt shingles, roof coating (except paint)	822	1,250,428	5,280,530	9,820,098	4,539,568
Envelopes	389	558,785	911,225	1,963,648	1,052,423
Die-cut Paper and Paperboard, and Converted Cardboard	142	194,771	356,432	839,729	483,297
Converted Paper Products, not elsewhere classified	425	570,993	1,606,162	3,794,475	2,188,313
Total Pacific Coast	**18,093**	**$27,729,985**	**$79,629,392**	**$150,151,002**	**$70,521,610**
WASHINGTON—					
Wood Pulp Mills	4,364	$ 7,342,697	$20,219,364	$37,288,183	$17,068,819
Paper and Paperboard Mills	3,385	5,275,039	17,416,041	33,961,138	16,545,097
Paperboard Containers and Boxes, not elsewhere classified	572	759,700	2,347,587	4,358,057	2,010,470
Total	**8,321**	**$13,377,436**	**$39,982,992**	**$75,607,378**	**$35,624,386**
OREGON—					
Wood Pulp Mills	1,003	$ 1,300,536	$ 3,613,261	$ 6,344,087	$ 2,730,826
Paper and Paperboard Mills	1,902	2,828,756	9,050,207	15,695,747	6,645,540
Paperboard Containers and Boxes, not elsewhere classified	158	238,708	334,608	766,283	431,675
Roofing, built-up and roll; asphalt shingles; roof coating (except paint)	21	19,811	45,027	157,312	112,285
Total	**3,084**	**$ 4,387,811**	**$13,043,103**	**$22,963,429**	**$ 9,920,326**
CALIFORNIA—					
Paper and Paperboard Mills	2,449	$ 3,933,745	$ 8,524,084	$17,501,256	$ 8,977,172
Paperboard Containers and Boxes, not elsewhere classified	2,148	3,103,641	8,185,711	14,989,127	6,803,416
Paper Bags, except those made in paper mills	334	372,186	1,784,180	2,829,174	1,044,994
Envelopes	389	558,785	911,225	1,963,648	1,052,423
Die-cut Paper and Paperboard, and Converted Cardboard	142	194,771	356,432	839,729	483,297
Converted Paper Products, not elsewhere classified	425	570,993	1,606,162	3,794,475	2,188,313
Roofing, built-up and roll; asphalt shingles, roof coatings (except paint)	801	1,230,617	5,235,503	9,662,786	4,427,283
Total	**6,688**	**$ 9,964,738**	**$26,603,297**	**$51,580,195**	**$24,976,898**

Source: Bureau of the Census, Census of Manufactures 1939. No data for employees of central administrative offices are included. Number of employees reported for 1939 is not comparable with 1937 data as the 1939 census, for the first time, called for those employed in distribution, construction, etc., to be listed separately from the manufacturing employees of the plants. Those employees are not included in this preliminary report but will be included in later census data.

Both salaried employees and wage earners have been grouped together to simplify this table. In census data differentiation is made. Neither profits nor losses can be determined from above data because no data are collected for certain expense items, such as interest, rent, depreciation, taxes, insurance and advertising.

THE UNITED STATES WOOD PULP INDUSTRY'S 1941 CAPACITY

Report on Survey by the United States Pulp Producers Association
for the Advisory Commission to the Council of National Defense

Table No. 1 — Total Industry's 1941 Pulp Capacity under "Normal" and "Forced-draft" Operations

GRADES	Normal Maximum capacity as of January 1, 1941	Additional capacity installed for operation during 1941	Potential increased capacity under "forced-draft"	Total 1941 maximum potential capacity
Bleached Sulphite	1,713,913	12,125	81,382	1,807,420
Unbleached Sulphite	1,046,102	39,047	62,221	1,147,370
TOTAL SULPHITE	2,760,015	51,172	143,603	2,954,790
Bleached Sulphate	697,163	118,186	11,275	826,624
Unbleached Sulphate	3,377,338	28,004	120,480	3,525,822
TOTAL SULPHATE	4,074,501	146,190	131,755	4,352,446
Soda Pulp	587,641	0	41,959	629,600
Special Grades	183,412	3,500	17,940	204,852
Groundwood	2,357,288	23,060	218,772	2,599,120
TOTAL, ALL GRADES	9,962,857	223,922	554,029	10,740,808

Table No. 2 — 1941 Pulp Capacity of Mills producing entirely for the Market

	Normal maximum 1941 capacity	Potential increased capacity under "forced-draft"	Total 1941 maximum potential capacity
Bleached Sulphite	708,730	21,660	730,390
Unbleached Sulphite	293,190	2,900	296,090
TOTAL SULPHITE	1,001,920	24,560	1,026,480
Bleached Sulphate	63,000	0	63,000
Unbleached Sulphate	122,500	7,000	129,500
TOTAL SULPHATE	185,500	7,000	192,500
Soda Pulp	51,600	0	51,600
Special Grades	0	0	0
Groundwood	71,848	9,852	81,700
TOTAL, ALL GRADES	1,310,868	41,412	1,352,280

UNITED STATES PULP PRODUCERS ASSOCIATION
March 4, 1941

THE UNITED STATES WOOD PULP INDUSTRY'S 1941 CAPACITY

Table No. 3 1941 Pulp Capacity of Self-contained mills

GRADES	Self-contained mills' 1941 pulp capacity required to supply their own and affiliated mills' pulp requirements for paper and board production on the basis of their present normal paper machine operation	Self-contained mills' estimated 1941 normal maximum pulp capacity in excess of their own paper and board machine requirements	Self-contained mills' estimated 1941 additional pulp capacity possible under forced-draft operations	Total estimated maximum potential 1941 capacity for own use and sale
Bleached Sulphite	851,594	172,259	53,177	1,077,030
Unbleached Sulphite	620,561	173,662	57,057	851,280
TOTAL SULPHITE	1,472,155	345,921	110,234	1,928,310
Bleached Sulphate	704,768	54,608	4,248	763,624
Unbleached Sulphate	3,025,662	261,692	108,968	3,396,322
TOTAL SULPHATE	3,730,430	316,300	113,216	4,159,946
Soda Pulp	493,994	43,763	40,243	578,000
Special Grades	172,960	14,147	17,745	204,852
Groundwood	2,068,410	243,308	205,702	2,517,420
TOTAL, ALL GRADES	7,937,949	963,439	487,140	9,388,528

UNITED STATES PULP PRODUCERS ASSOCIATION
March 4, 1941

THE UNITED STATES WOOD PULP INDUSTRY'S 1941 CAPACITY

Table No. 4 1941 Capacity as compared with estimated 1941 Production

CAPACITY	SULPHITE Bleached	SULPHITE Unbleached	SULPHATE Bleached	SULPHATE Unbleached	SODA	SPECIAL GRADES	GROUNDWOOD	TOTAL, ALL GRADES
1 - Normal maximum capacity as of January 1, 1941	1,713,913	1,046,102	697,163	3,377,558	587,641	183,412	2,357,288	9,962,857
2 - Additional capacity installed for operation during 1941	12,125	39,047	118,186	28,004	0	3,500	23,060	223,922
3 - Potential increased capacity under "forced-draft"	81,382	62,221	11,275	120,480	41,959	17,940	218,772	554,029
4 - TOTAL 1941 maximum potential capacity	1,807,420	1,147,370	826,624	3,525,822	629,600	204,852	2,599,120	10,740,808
PRODUCTION								
1 - Estimated production required to supply producing mills' own 1941 normal paper and board requirements	851,594	620,561	704,768	3,025,662	493,994	172,960	2,068,410	7,937,949
2 - Estimated 1941 "surplus" production under normal operations by:								
a - Self-contained mills	172,259	173,662	54,608	261,692	43,763	14,147	243,308	963,439
b - Mills producing pulp entirely for market	708,730	293,190	63,000	122,500	51,600	0	71,848	1,310,868
3 - Estimated TOTAL industry's normal 1941 production	1,732,583	1,087,413	822,376	3,409,854	589,357	187,107	2,383,566	10,212,256
4 - Excess, Industry's 1941 potential capacity over estimated normal production	74,837	59,957	4,248	115,968	40,243	17,745	215,554	528,552

UNITED STATES PULP PRODUCERS ASSOCIATION
March 4, 1941

THE UNITED STATES WOOD PULP INDUSTRY'S 1941 CAPACITY

Table No. 5 1940/1941 Pulp Capacity, Supply and Consumption
1941 figures estimated on the basis of data reported as of January 1, 1941

	SULPHITE		SULPHATE			TOTAL,
	Bleached	Unbleached	Bleached	Unbleached	GROUNDWOOD	ALL GRADES *
Potential Capacity						
1940	1,760,813	1,130,619	642,015	3,347,499	2,457,515	10,203,353
1941	1,807,420	1,147,370	826,624	3,525,822	2,599,120	10,740,808
Production						
1940	1,612,000	977,000	553,000	3,171,000	1,961,000	9,007,000
1941	1,732,583	1,087,413	822,376	3,409,854	2,383,566	10,212,256
Imports						
1940	352,916	373,390	84,887	223,577	171,513	1,224,569
1941	330,000	290,000	75,000	100,000	160,000	970,000
Exports						
1940	218,457	72,290	18,205	157,568	1,766	480,926
1941	110,000	70,000	16,000	100,000	1,800	310,000
Domestic Sales						
1940	611,400	355,000	75,400	143,000	40,800	1,325,000
1941	670,000	450,000	100,000	180,000	50,000	1,550,000
Domestic Sales plus Imports						
1940	964,316	728,390	160,287	366,577	212,313	2,547,569
1941	1,000,000	740,000	175,000	280,000	210,000	2,520,000
Consumption **						
1940	1,746,459	1,278,100	619,682	3,237,009	2,130,747	9,750,643
1941	1,952,583	1,307,413	881,376	3,409,854	2,541,766	10,872,256
Estimated decreases in stocks available to converting mills						
1940	125,000	135,000	25,000	85,000		368,000
1941	90,000	130,000	10,000	70,000		300,000

* Including Soda and Special Grades
** Exclusive of stock decreases

UNITED STATES PULP PRODUCERS ASSOCIATION
March 4, 1941

For the second quarter of 1940 bleached sulphite was raised $1.50 per ton to $61.50 and unbleached sulphite rose $2.50 per ton to $52.50.

In view of rising costs and increasing demand the prices were still too low for generally profitable operations for all producing mills, so for the third quarter, starting July 1, 1940, the price of bleached sulphite ex dock Atlantic ports was raised to $72.50 per short ton and that of unbleached sulphite to $62.50 per short ton.

At this point they will have remained without change for a full year on July 1, 1941. By avoiding the pitfalls of accepting wild bids for spot deliveries as the basis for contract prices the pulp producers provided stability to the pulp situation and gave the paper mills an opportunity to stabilize their markets. The opportunity was not immediately taken up as will be seen later on.

Pulp Exports

● The exports of wood pulp expanded rapidly in 1940 for the same reason that domestic demand increased. Buyers of pulp throughout the world were cut off from Scandinavian supplies and were forced to turn to the American and Canadian mills for relief.

While exports of wood pulp from this country rose to a new record high of 480,362 short tons as compared with exports of 139,504 short tons in 1939, American producers shipped out only about half of the pulp they could have exported.

Out of a total of 1,847,241 short tons produced for sale by American pulp mills, 1,366,879 short tons or 74 per cent were sold to American buyers and 26 per cent or 480,362 short tons were exported.

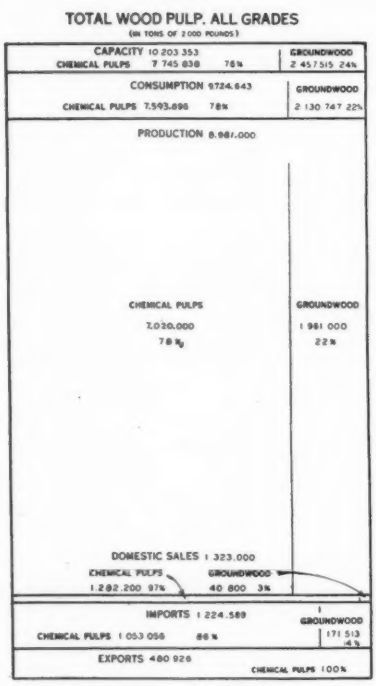
On the basis of export business available during 1940 American pulp mills could have sold half instead of a quarter of their total production, and at considerably better prices. During the second half of 1940 the average prices for which pulps sold in the export market were $10 to $12 more than the contract prices paid by American paper mills. American pulp mills were built primarily to serve American paper mills and they prefer to sell most of their pulp to them. A permanent, mutually satisfactory arrangement is desired by the pulp mills, and in the interest of this policy they held their exportations to but 26 per cent of the total sold and sacrificed the potential extra profit of from $10 to $12 per ton on about 24 per cent additional which they could have easily exported.

Attempts to Curtail Exports

● In June, 1940, an effort was made by a group of pulp buying mills to persuade the State Department to stop exports of wood pulp. The Wood Pulp Consumer's Committee, as it was called, wrote a letter to pulp buying mills which was quoted as follows by Representative Wallgren of Washington in a letter he wrote to Secretary of State Hull:

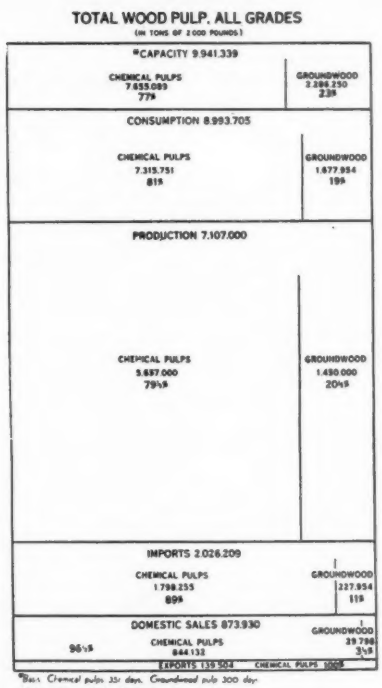
"Germany has indicated an unwillingness to permit the shipment of Swedish pulp to the United States as long as the United States pulp producers are exporting to European countries, and as long as there is any possibility of the pulp or an

1940


TOTAL WOOD PULP, ALL GRADES
(IN TONS OF 2000 POUNDS)
CAPACITY 10 203 353
CHEMICAL PULPS 7 745 638 76%
GROUNDWOOD 2 457 515 24%
CONSUMPTION 9724 643
CHEMICAL PULPS 7 593 896 78%
GROUNDWOOD 2 130 747 22%
PRODUCTION 8 987 000
CHEMICAL PULPS 7 030 000 78%
GROUNDWOOD 1 981 000 22%
DOMESTIC SALES 1 323 000
CHEMICAL PULPS 1 282 200 97%
GROUNDWOOD 40 800 3%
IMPORTS 1 224 589
CHEMICAL PULPS 1 053 056 86%
GROUNDWOOD 171 513 14%
EXPORTS 480 926
CHEMICAL PULPS 100%

United States Pulp Producers Association.

1939


TOTAL WOOD PULP, ALL GRADES
(IN TONS OF 2000 POUNDS)
*CAPACITY 9 941 339
CHEMICAL PULPS 7 655 089 77%
GROUNDWOOD 2 286 250 23%
CONSUMPTION 8 993 705
CHEMICAL PULPS 7 315 751 81%
GROUNDWOOD 1 677 954 19%
PRODUCTION 7 107 000
CHEMICAL PULPS 5 617 000 79%
GROUNDWOOD 1 490 000 20%
IMPORTS 2 026 209
CHEMICAL PULPS 1 798 255 89%
GROUNDWOOD 227 954 11%
DOMESTIC SALES 873 930
CHEMICAL PULPS 844 132 96%
GROUNDWOOD 29 798 3%
EXPORTS 139 504
CHEMICAL PULPS 100%

*Basis: Chemical pulps 351 days. Groundwood pulp 300 days.

United States Pulp Producers Association.

equivalent amount being diverted to the Allies.

"The above facts, and many others, lead to the conclusion that if converting mills are to obtain their wood pulp requirements it is necessary that exports of wood pulp from the United States to European countries, or to countries where the pulp may be trans-shipped to France or England, be discontinued; and that an agreement be reached between England, France and Germany whereby they will permit the shipment of pulp to the United States."

* * * * *

"It will also be very helpful if, as the opportunity affords, you will bring to the attention of the domestic pulp producers who are exporting wood pulp the fact that such action is making it increasingly difficult for the converting mills to obtain their requirements. It is hoped that the domestic pulp producers will be willing to cooperate to the extent of first making available to the converting mills at a fair price their full production of pulp for sale, rather than shipping it abroad to obtain a temporary advantage in price."

After the increase in pulp prices went into effect July 1st, complaints brought the matter before the Defense Advisory Commission's price division headed by Leon Henderson. A large group of pulp producers, representatives of self-contained mills and representatives of pulp buying mills met with the price division and discussed the price and supply situation. As a result the American pulp industry was commended for raising prices a reasonable amount, for endeavoring to prevent a runaway market and, too, for trying to supply the tonnage and grades needed by the domestic paper industry to replace imports from Europe.

The move to curtail exports of American pulp has so far been ineffectual for it is aimed largely at countries friendly to the United States, and further it has not been shown to date that any American paper mill has gone without pulp because of exports.

When the exports are analyzed it is found that of the total of 480,362 short tons exported in 1940, 40 per cent or 206,730 short tons went to the United Kingdom. The next largest customer was Japan, who takes principally rayon grades of bleached sulphite. Japan took 96,234 short tons in 1940.

The next five export customers are all nations the United States desires to aid as friends, Brazil, which took 32,907 short tons; Australia with 30,517 short tons; Mexico with 29,484 short tons; Argentina with 14,035 short tons and British India with 3,666 short tons. All other export buyers together took 66,789 short tons in 1940.

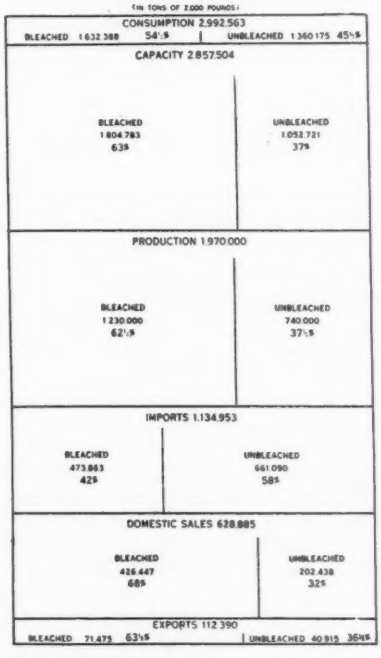
In view of our pledged aid to Britain and to South America we would probably export pulp to them even if consumption had to be cur-

1940

TOTAL SULPHITE PULP
(IN TONS OF 2000 POUNDS)
CONSUMPTION 3 024 559
BLEACHED 1 748 459 58%
UNBLEACHED 1 276 100 42%
CAPACITY 2 891 432
BLEACHED 760 813 81%
UNBLEACHED 1 130 619 39%
PRODUCTION 2 589 000
BLEACHED 1 612 000 62%
UNBLEACHED 977 000 38%
DOMESTIC SALES 966 400
BLEACHED 611 400 63%
UNBLEACHED 355 000 37%
IMPORTS 726 306
BLEACHED 352 916 49%
UNBLEACHED 373 390 51%
EXPORTS 290 747
BLEACHED 218 457 75%
UNBLEACHED 72 290 25%

United States Pulp Producers Association.

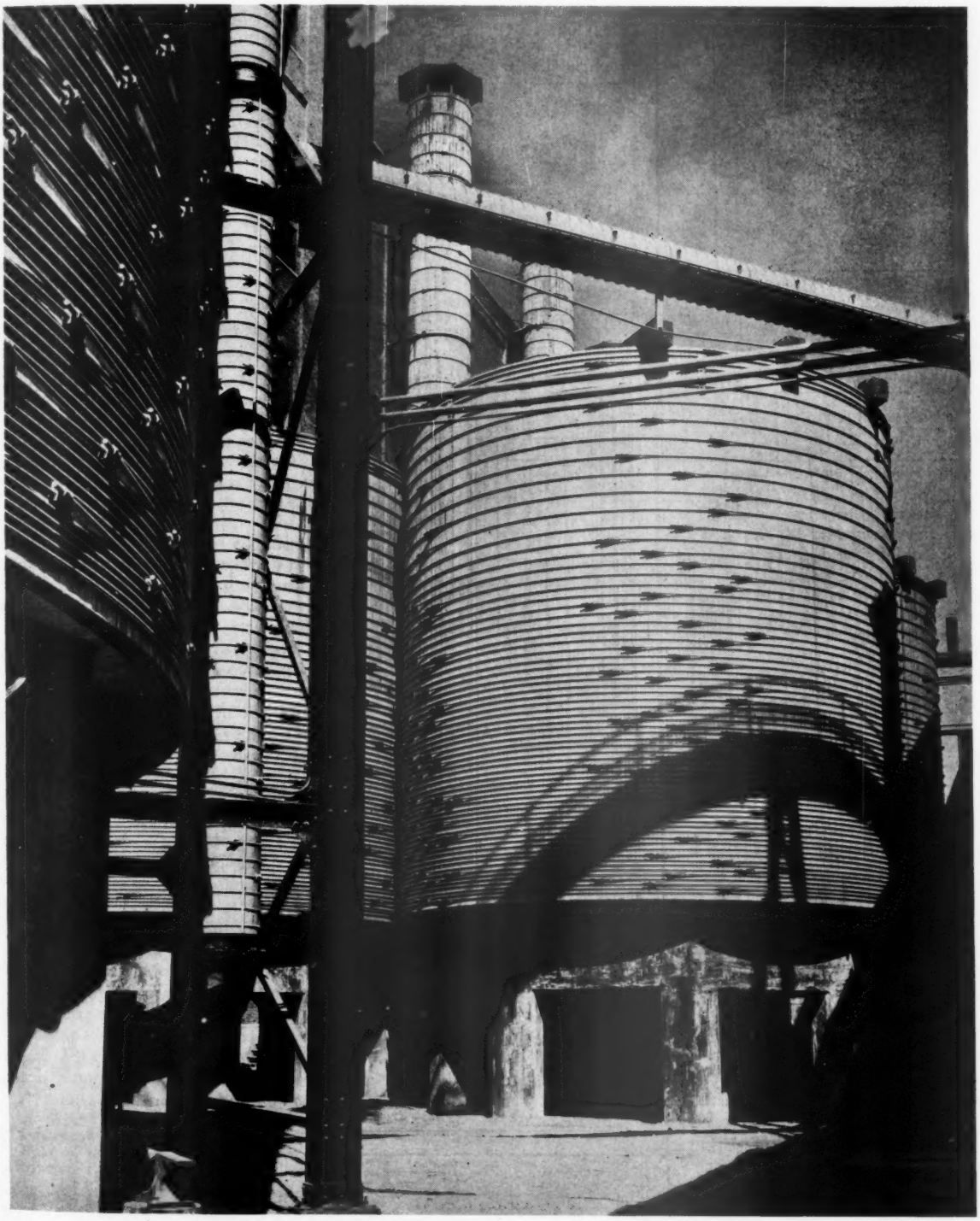
1939


TOTAL SULPHITE PULP
(IN TONS OF 2000 POUNDS)
CONSUMPTION 2 992 563
BLEACHED 1 632 388 54½%
UNBLEACHED 1 360 175 45½%
CAPACITY 2 857 504
BLEACHED 1 804 783 63%
UNBLEACHED 1 052 721 37%
PRODUCTION 1 970 000
BLEACHED 1 230 000 62½%
UNBLEACHED 740 000 37½%
IMPORTS 1 134 953
BLEACHED 473 863 42%
UNBLEACHED 661 090 58%
DOMESTIC SALES 628 885
BLEACHED 426 447 68%
UNBLEACHED 202 438 32%
EXPORTS 112 390
BLEACHED 71 475 63½%
UNBLEACHED 40 915 36½%

United States Pulp Producers Association.

tailed somewhat in the United States. April 15th, 1941, the President by proclamation included "purified wood pulp containing 80 per cent or more alpha cellulose," under the export license system. On May 12th of this year another proclamation included chemical wood pulp under export license control effective June 3rd. The first order covered all pulp and it is not at this writing clear why the second order was deemed necessary.

The placing of any commodity or product under export license control does not necessarily mean that item will not be exported. It means that it is considered important to defense and may be restricted. Opinion generally was that the only pulp exports to be affected would be to



DOUGLAS FIR is an important wood to the pulp and paper industry on the Pacific Coast ... Of growing importance as a pulpwood in the sulphate process, Douglas fir is an ideal material for acid tanks, stock lines, vomit stacks and for numerous other purposes around the mill.

1940

BLEACHED SULPHITE PULP
CAPACITY 1 760 813
CONSUMPTION 1 748 459
PAPER GRADES 1 459 218 84%
RAYON 287 241 16%
PRODUCTION 1 612 000
PAPER GRADES 1 323 500 82%
RAYON 288 500 18%
DOMESTIC SALES 611 400
PAPER GRADES 453 700 74%
RAYON 157 700 26%
IMPORTS 352 918
PAPER GRADES 238 971 68%
RAYON 113 945 32%
EXPORTS 218 457
PAPER GRADES 103 253 47%
RAYON 115 204 53%

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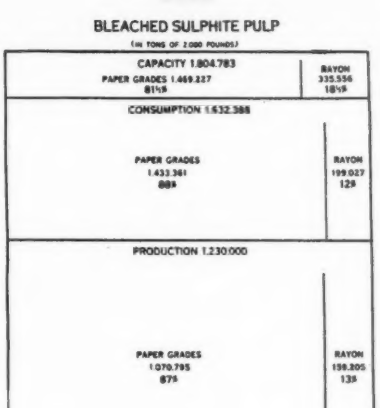
1939


BLEACHED SULPHITE PULP
CAPACITY 1 804 783
PAPER GRADES 1 469 227 81½%
RAYON 335 556 18½%
CONSUMPTION 1 632 388
PAPER GRADES 1 433 361 88%
RAYON 199 027 12%
PRODUCTION 1 230 000
PAPER GRADES 1 070 795 87%
RAYON 159 205 13%
IMPORTS 473 863
PAPER GRADES 385 809 81½%
RAYON 88 054 18½%
DOMESTIC SALES 426 447
PAPER GRADES 319 687 75%
RAYON 106 760 25%
EXPORTS 71 475
PAPER GRADES 23 243 32½%
RAYON 48 232 67½%

United States Pulp Producers Association.

Japan, who, as mentioned before, takes rayon grades of bleached sulphite chiefly, and these grades can be adapted to use in defense work in such products as smokeless powder and plastics.

In February a group was organized called the Association of Wood Pulp Consumers, Inc., with headquarters in Washington. Its membership is made up of pulp buying mills. The purpose stated was that only through united action could they assure their mills of a sufficient supply of wood pulp at fair prices. Their publicity releases since indicate that they desire to stop all pulp exports. Without coming right out and asking that exports to Britain be stopped the inference is to be found in the latest release, May 12th, which says in part, "Paper mills which depend on purchased wood pulp have two sources of supply, namely, that portion of the domestic production which is offered for sale, and imports. With the integrated paper mills using an increasingly large percentage of their pulp production and imports from Europe practically cut off, the mills purchasing wood pulp are keenly interested in having an opportunity to secure the full domestic pulp production which is offered for sale."

That was the first paragraph. Here is the last paragraph:

"There seems to be very little hope of receiving imports of wood pulp from European countries in the near future. Some time ago the British and German governments agreed with the Swedish government to permit five ships a month to sail from Gothenburg to other countries on condition that the same number of Swedish ships return to Gothernburg each month. There was the further proviso that the products to be carried on the incoming as well as outgoing ships had to be approved by the British and German governments. The S. S. Stegeholm which did get through was machine gunned by German planes, although its cargo had been approved; two others were sunk by German submarines. Negotiations are still in progress to provide some shipping, but it is doubtful if the German government will approve the shipment of wood pulp from Sweden to the United States as long as the pulp producers in the United States are sending large quantities of wood pulp to England and her allies. In the past the German authorities have indicated that they would not authorize the shipment of wood pulp to the United States to replace wood pulp exported from the United States."

1940

PAPER GRADES - BLEACHED SULPHITE PULP
CAPACITY 1 472 313
CONSUMPTION 1 459 218
PRODUCTION 1 323 500
DOMESTIC SALES 453 700
IMPORTS 238 971
EXPORTS 103 253

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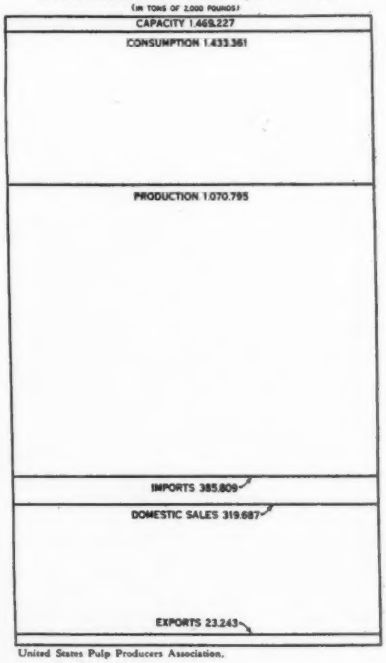
1939


PAPER GRADES - BLEACHED SULPHITE PULP
CAPACITY 1 469 227
CONSUMPTION 1 433 361
PRODUCTION 1 070 795
IMPORTS 385 809
DOMESTIC SALES 319 687
EXPORTS 23 243

United States Pulp Producers Association.

Pulp Supply and Demand

● There are some who apparently believe that if exports could be prohibited entirely the additional supply thrown on the domestic market would break the price structure. If this were to happen the available

supply of domestic pulp would drop and very likely drop far enough to bring about a still sharper price rise.

Today's heavy production of pulp in this country is only possible because of the present price structure. Many marginal mills are producing pulp for sale that would not offer any pulp on the market if the price were $10 or $15 per ton less.

No definite predictions can be made as to whether a pulp shortage will become acute this year or not. In this Review Number are published, through the courtesy of the United States Pulp Producers Association, tables prepared by the organization for the Advisory Commission to the Council for National Defense. These were made up March 4th.

It will be noted from Table 5 that United States wood pulp production for 1941 is estimated at 10,212,256 short tons. Imports (from Canada) are estimated at 970,000 tons. Exports are estimated to be lower in 1941 than in 1940, the total expected being 310,000 short tons. Production plus imports less exports equals the estimated 1941 consumption of 10,872,256 short tons, which is expected will be 1,122,613 short tons larger than in 1940.

Also note that the potential 1941 United States pulp producing capacity is estimated at 10,740,808 short tons, 528,552 short tons more than the estimated production.

However, talk in the industry points toward an expected shortage of unbleached sulphite later in the year and also a shortage of unbleached sulphate. Mr. Ossian Anderson, president of the Puget Sound Pulp & Timber Company of Bellingham, Washington, in a public statement issued May 5th, said:

• "Production of all chemical grades amounted to 1,891,566 tons for the first three months of 1941, compared with 1,645,615 tons in the same period of 1940. Unbleached sulphite production of 268,774 tons compared with 224,515 tons in the first quarter of 1940.

"Imports of 196,201 tons of all chemical grades," he stated, "represented a drop of 257,235 tons compared with 453,236 tons imported in the first quarter last year. Unbleached sulphite imports at 62,004 tons were fully 109,338 tons below first quarter arrivals last year.

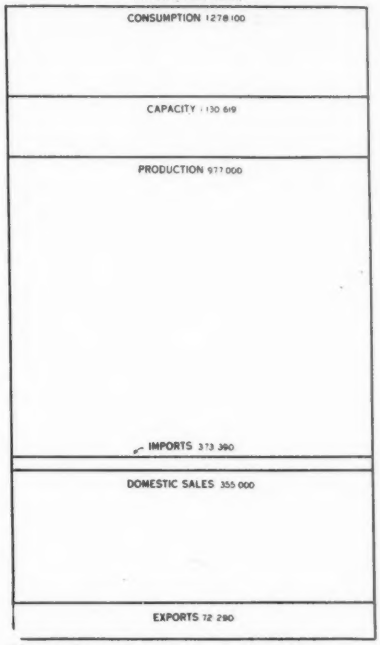
"Coupled with this was an increase in United States exports, so that our import balance, comparing first quarters of 1941 and 1940, showed a decline of some 27,136 fewer tons of all chemical grades in unbleached sulphite.

"Since the gain in production did not fully offset the loss in import balance, the net result for the quarter was that 27,136 fewer tons of all chemical grades combined and 70,659 fewer tons of unbleached sulphite became available for domestic consumption than in the corresponding quarter last year. Coupled with increasing consumption this means a diminishing reserve supply."

Mr. Anderson referred to American Paper and Pulp Association's recent warning that "If pulp stocks are allowed to diminish to the point where reserves are insufficient to meet such a demand (national defense and industrial requirements) a critical shortage might develop for a few months before domestic and Canadian producers could step up production and shipments to meet this excessive drain on stock reserves."

He asserted that the pulp industry is already operating at close to 100 per cent of capacity in its effort to cope with the situation, but even so a decrease in stocks on hand seems inevitable this year.

1940



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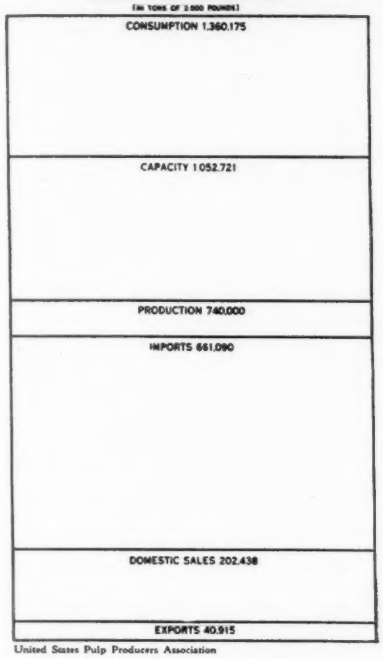
1939



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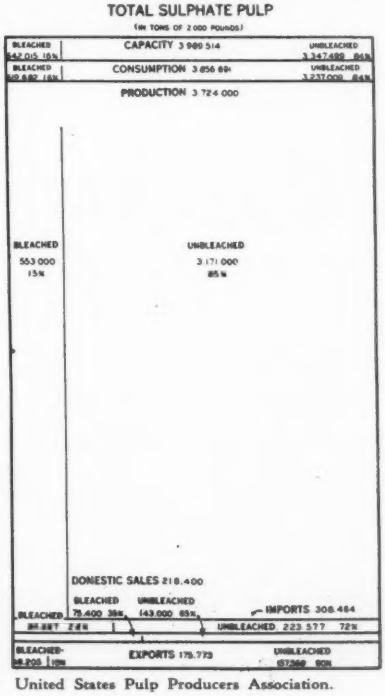
1940



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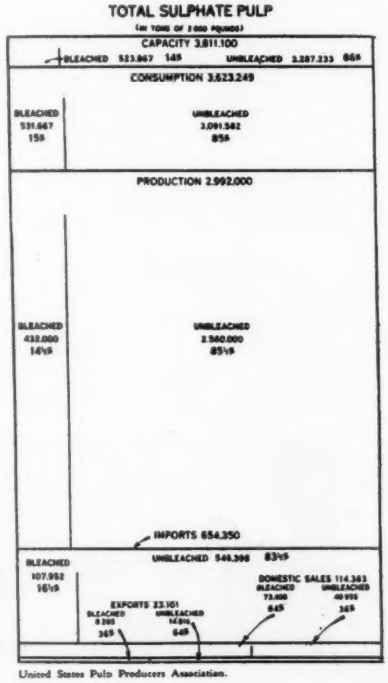
1939



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He called attention to the recent declaration of the U. S. Department of Commerce which stated, "It is generally accepted that the most serious supply problem exists with unbleached sulphite pulp, of which 50 per cent of our requirements are normally imported. With paper and pulp consumption rising, it is believed that many manufacturers using unbleached sulphite pulp will face an acute supply problem before the end of 1941."

The American Paper & Pulp Association in its Monthly Statistical Summary for January, 1941, said under "Current Aspects of the Wood Pulp Situation."

● "The current surveys of paper and paperboard mill stocks of purchased wood pulp, made by the American Paper and Pulp Association and the National Paperboard Association, together with the data on pulp mill stocks and operations which are available through the United States Pulp Producers Association, have now made possible a comprehensive analysis of the over-all pulp situation.

"The data presented herein pertain exclusively to paper grades of sulphite and sulphate pulp, rayon grades, soda and mechanical pulps being excluded. These data deal only with purchased wood pulp; pulp produced and used in self-contained mills is not included in the discussion, although data concerning self-contained mills purchasing part of their pulp requirements are included.

"Since early in 1940 (as shown in Figure I) total stocks of purchased pulp have shown a steady month-to-month decrease. Most of the decrease occurred in paper and paperboard mill stocks, which, between April 1, 1940, and January 1, 1941, were decreased 199,000 tons. Dock stocks during the same period showed a decrease of 187,000 tons. Pulp mill stocks for sale to domestic markets, although varying from month to month, showed only a small change between April 1 and January 1. Total reduction of paper mill stocks, dock stocks and pulp mill stocks amounted to 391,000 tons during the period, or an average of about 43,000 tons per month. The greatest monthly reduction occurred during the second and third quarters of the year, and since October, reductions have been minor in quantity.

"Figure II shows the amounts of pulp available to the domestic market each month during 1940 through imports and domestic shipments. Since April the quantities of pulp received from Europe have been negligible, being limited almost entirely to an occasional cargo from Finland via Petsamo. Canadian imports have varied since January from 38,000 to 54,000 tons, the highest level having been established in July. Domestic shipments to the United States market varied from 64,000 to 93,000 tons, reaching the higher figure in June. It will be seen from the above chart that during each month since February the supply from the three sources shown has fallen below the estimated average monthly consumption for the last nine months of 1940, the smallest deficit, 26,000 tons, occurring in April, and the largest, 61,000 tons, occurring in October. The total deficit from April 1, 1940, to January 1, 1941, amounted to 391,000 tons, or 43,000 tons per month, which was met through depletion of mill and dock stocks. (See Figure I.)

"In analyzing the data presented above, several considerations assume importance both by themselves and by their implications. For instance, too much importance can easily be attached to the reduction in mill and dock stocks, as far as the over-all situation is concerned. It is probable that much of this drain occurred as a result of the relationship existing between pulp and paper prices. Most of these stocks were purchased at price levels considerably below current prices, and in view of unsatisfactory paper prices prevailing throughout 1940, it was to be expected that paper manufacturers would use as much of their low-cost pulp reserves as would be consistent with good cost accounting practices.

"One additional important point in respect to dock and mill stocks should not be overlooked. The reserves accumulated during the last quarter of 1939 and the first quarter of 1940 provided a backlog which could be drawn on during 1940, and gave North American pulp producers an opportunity to increase their production to meet the exigencies of the situation. It is quite possible that, as a result of national defense and industrial requirements, the paper industry may be called upon to meet extraordinarily heavy demands for paper during 1941. If pulp stocks are allowed to diminish to the point where reserves are insufficient to meet such a demand, a critical shortage might develop for a few months before domestic and Canadian producers coluld step up production and shipments necessary to meet this excessive drain on stock reserves.

"As has been shown in Figure II, current additions to stocks during 1940 fell short of consumption. This relationship between supply and consumption also resulted largely from economic considerations. Assuming that the consumption of purchased pulp during 1941 will be approximately equal to that of the last nine months of 1940, or in the neighborhood of 185,000 tons per month, the question presents itself as to how much pulp could be made available through United States and Canadian producers to meet it. In the tabulation shown below, estimated monthly consumption is compared with estimates of monthly quantities which may reasonably be expected to be available during 1941.

Estimated Monthly Consumption
185,000 Tons

* Based on imports plus U. S. production for sale to domestic markets plus net decrease in mill and dock stocks, April 1, 1940, to January 1, 1941.

Estimated Potential Quantities of Wood Pulp Available per Month for Domestic Market During 1941

1. Imports from Canada	60,000 Tons
2. U. S. Production for Sale to Domestic Markets	120,000 Tons
3. Imports from Europe	6,000 Tons
Total	186,000 Tons

"It should be noted that the quantities shown in the bottom table represent those which might be available under 'all-out' operations. It is, of course, possible that 1941 monthly consumption will exceed that shown in the above tabulation. In such a case the excess of consumption over available supplies would again have to be met from inventories.

FIG. I. TOTAL STOCKS OF WOOD PULP AT DOCKS,[1] PAPER AND PAPERBOARD MILLS,[2] AND PULP MILLS,[3] 1940

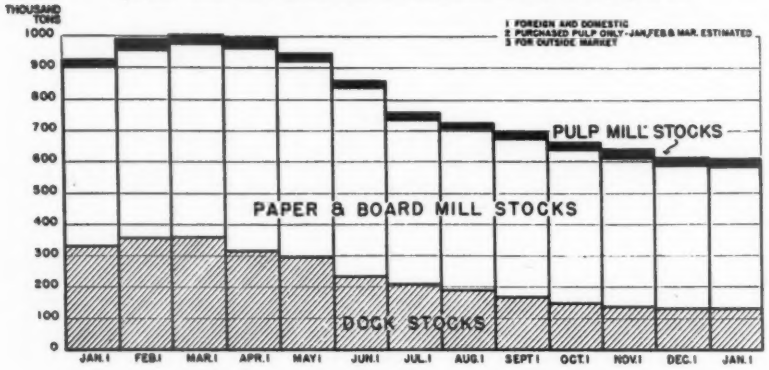
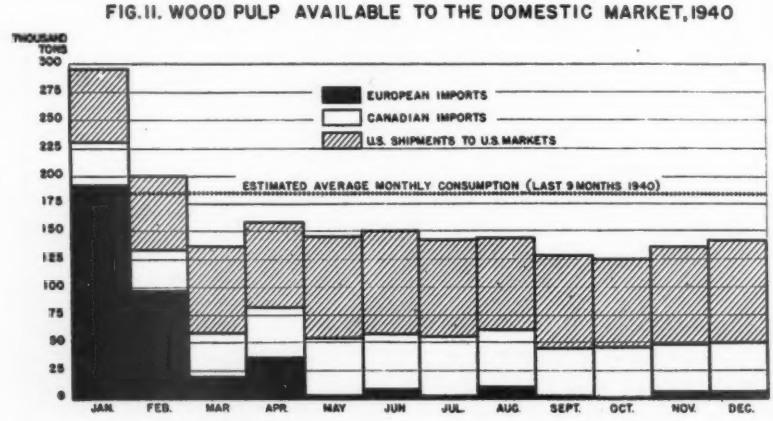


FIG. II. WOOD PULP AVAILABLE TO THE DOMESTIC MARKET, 1940



Conclusions

"From the foregoing data the following conclusions may be drawn in respect to over-all pulp supplies, but may not apply in all respects to individual grades of pulp: (1) although dock and mill stocks have been drastically reduced, the rate of depletion in recent months has diminshed and over-all stocks appear sufficient for most of 1941; and (2) available supplies for pulp for the domestic market during 1941 are expected to be in close balance with estimated consumption.

"Despite these favorable aspects it is apparent that, while no actual scarcity of pulp is imminent, except in certain grades of unbleached pulp hitherto obtained largely from Scandinavia, every ton of idle pulp capacity is to be regretted, and no opportunity to build up and maintain reserves both at paper mills and at pulp mills should be neglected."

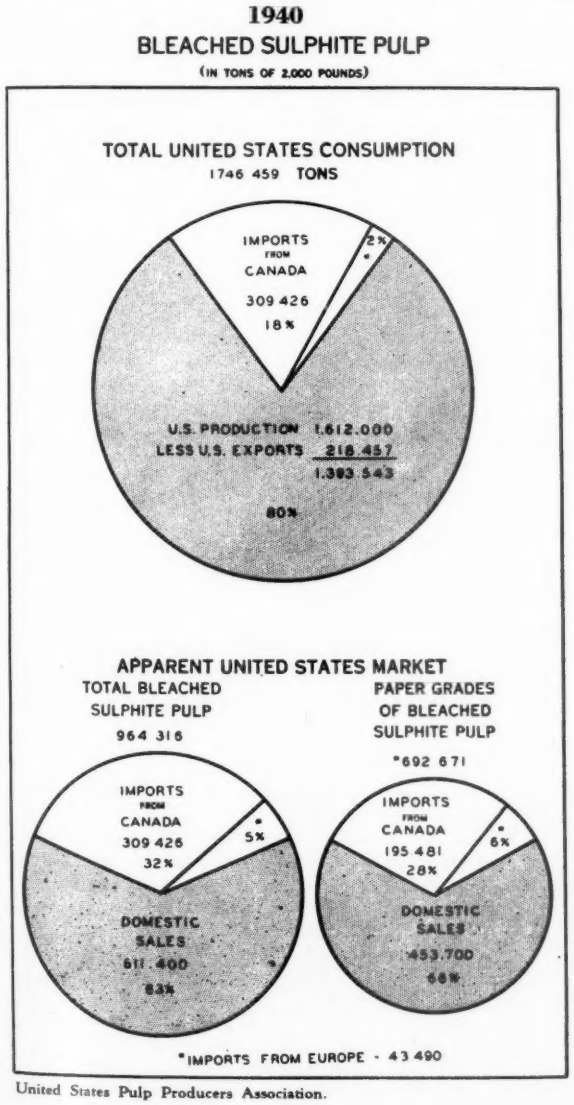
Another View on Pulp Supplies

● In the "Review of United States Foreign Trade in Paper Base Stocks and Paper in 1940," issued by the Bureau of Foreign & Domestic Commerce in March of this year, is the following statement on supplies:

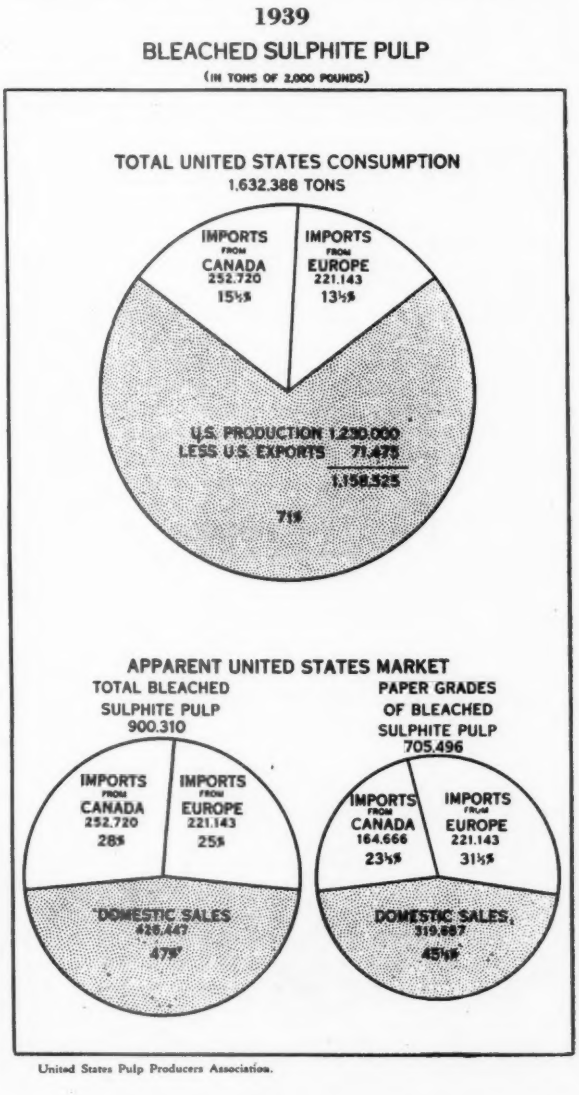
"It is reported that pulp stocks available to converting mills were reduced some 350,000-400,000 tons in 1940, the greater proportion of the reduction being in the unbleached chemical grades. At the same time, converting paper mills apparently did not replenish inventories of imported pulp through increased purchases from domestic mills. This evidently released some domestic pulp for export, and in several instances caused domestic pulp mills to operate below capacity in the face of a potential pulp shortage. From March 1st through December, 1940, pulp stocks available to converters were reduced approximately 40 per cent, with 500,000 tons remaining at the end of the year. If the current European situation continues many American paper manufacturers will find the 1941 supply problem complicated by substantial reductions in low cost pulp reserves.

"It is generally accepted that the most serious supply problem exists with unbleached sulphite pulp, of which 50 per cent of our requirements are normally imported. With paper and pulp consumption rising, it is believed that many paper manufacturers using unbleached sulphite pulp, will face an acute supply problem before the end of 1941. Although waste paper pulp and certain other grades of wood pulp can be substituted in limited quantities for unbleached sulphite pulp, it is highly possible that these expedients will fail to fully solve the problem.

"A tight supply situation may also be faced by consumers of certain special grades of bleached and un-



United States Pulp Producers Association.



United States Pulp Producers Association.

bleached sulphate pulps. This problem, however, in no way approaches that facing consumers of unbleached sulphite pulp.

"It has been suggested that an embargo should be placed on wood pulp exports to avoid potential difficulties. Analysis of our export trade reveals, however, that, with the exception of shipments of rayon pulp to Japan, in which grade there is no apparent scarcity, pulp goes chiefly to the United Kingdom and Latin America. Such action, therefore, would not be in keeping with our national policy of aiding the United Kingdom and developing markets in Latin America." (The emphasis is ours—Editor)

The predictions of a tight situation in supplies of wood pulp or of an actual shortage are predicated upon the assumption that paper production will continue throughout the year at a very high rate.

The Paper Situation

● Although the paper industry was running at close to 90 per cent of capacity in June of 1940 when pulp prices were raised to their present level, according to the production ratio report of the American Pulp & Paper Association, it was slow to adjust its market prices to the changed pulp situation.

For years the pendulum has swung back and forth, giving advantage to first the pulp buying group of paper mills and then to the self-contained mills. When European pulp prices are very low, as was the case over a good part of the past decade, the mills buying pulp have the cost advantage over those making their own pulp on an American cost basis. War caused the pendulum to swing back. The cost advantage passed into the hands of the self-contained plants and the pulp buying mills had to pay the going market price for pulp.

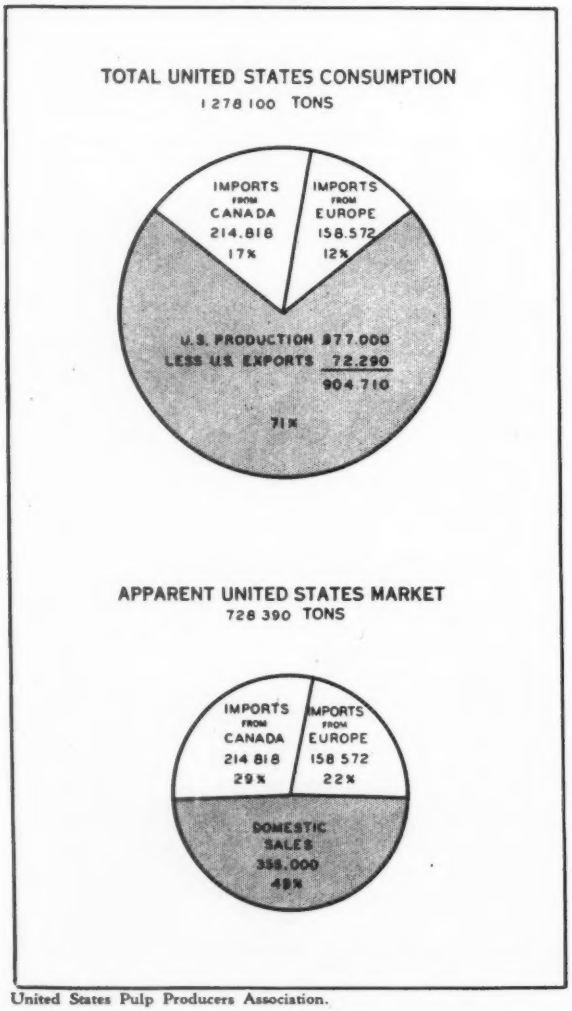
Paper prices did not follow pulp prices upward a year ago in July but lagged way behind. Some advances were made from time to time in the various grades but all in all the advances did not begin to offset the increased cost of pulp. The pulp buying mills accused the self-contained plants of refusing to raise prices in an attempt to force them out of business. A couple of years back the self-contained mills were accusing the others of cutting prices to force them out of business.

However, demand has been building up so steadily since the first of 1941 that operations are beyond 100 per cent of capacity according to the Association's weekly ratio of production to capacity. Many paper mills have backlogs of orders now, the middle of May, that will carry them through August.

1940

UNBLEACHED SULPHITE PULP

(IN TONS OF 2 000 POUNDS)

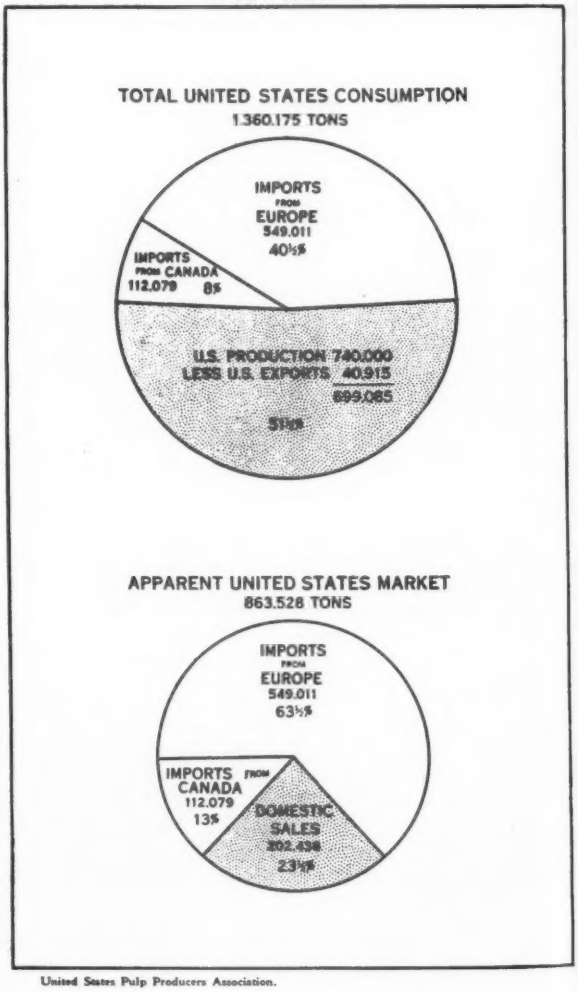


United States Pulp Producers Association.

1939

UNBLEACHED SULPHITE PULP

(IN TONS OF 2.000 POUNDS)



United States Pulp Producers Association.

The accelerated demand is apparently a mixture of increasing consumption and speculative buying. Price rises and expected price rises in recent months have caused jobbers and consumers to stock up before the new schedules go into effect. By the end of July most jobbers will be carrying heavier than normal inventories and so will large consumers of paper.

The Dow Jones News Service on May 21st carried the following story:

"Record-breaking demand for white paper has resulted in price advances by a number of mills in the spot market. Although the entire industry has not met the advances, which have averaged about $10 a ton, these changes probably foreshadow a general rise in contract quotations between June 1 and June 15. Some grades of white paper have been raised more than $10 a ton, but the average is about $10.

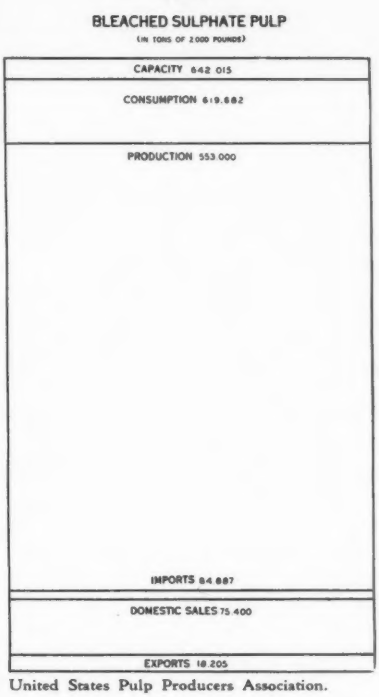
"These advances will tend to correct a situation in which paper prices have not reflected the advances in pulp. While many of the leading white paper producers are self-contained, making all the pulp that they use in their paper making, there are many which must purchase their pulp from other producers. The failure of white paper to advance with pulp prices has squeezed these producers.

"For several weeks the industry has been running at 100 per cent of capacity. This has been possible only by the operation of many mills on Sunday. Capacity is figured on a six-day week basis.

"Despite the high level of operations, orders are still piling up. One large producer estimates his backlog will carry over to August. The order bank with different companies will probably run from 30 to 60 days, or even longer, because some of the production in such periods is already sold under contract. It is believed likely that the industry will continue to run at about 100 per cent of capacity for some time."

The tremendous sums of money being spent for defense work is undoubtedly a major factor in the increased demand for paper. What proportion of the demand is real and what part is speculative will be clearer by the end of the summer.

If purchases of consumer goods are curtailed, as is being talked, the demand for paper will slacken off. Paperboard operating ratios at 84 per cent for the week ending May 10th as against 70 per cent for the month of April, 1940, probably do not reflect as much speculative buying as does the paper ratio, but paperboard production will fall off, too, if the buying of consumer goods is discouraged by stiffening the terms of installment selling, and the raising of retail prices.



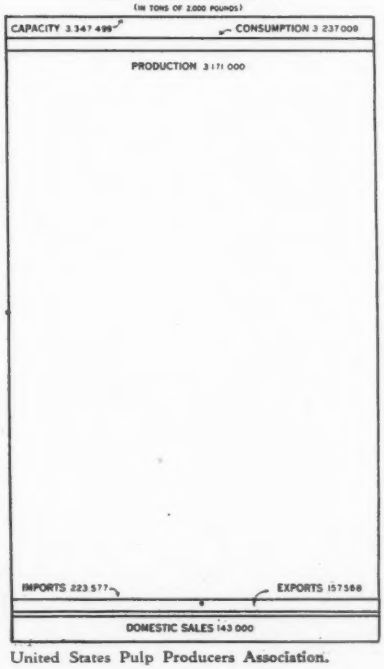
United States Pulp Producers Association.

United States Pulp Producers Association.

It is evident that there are factors operating which may reduce the demand for paper and paperboard. If they are not offset by newly created demands, the production of paper may be dropping back into the 80 per cents of capacity, and likewise the demand for wood pulp will be eased.

Wage Agreement Renewed

● The wage agreement between the mills on the Pacific Coast and the



United States Pulp Producers Association.

United States Pulp Producers Association

two unions, the International Brotherhood of Pulp, Sulphite & Paper Mill Workers and the International Brotherhood of Paper Makers, was renewed after negotiations at the end of May, 1940.

A week's vacation with pay was given to all employees working a minimum of two years plus a horizontal increase in hourly pay, making the new base rate for men 65 cents an hour and for women 52½ cents per hour. Other important changes in the Pacific Coast agreement included, a provision for special adjustments for approximately 1,000 employees to be based upon job analysis; special adjustments on maintenance jobs resulting in a general rate of $1.00 per hour for Class "A" journeymen mechanics; a guarantee of a minimum of four hours for any employee reporting and starting work; improvements in seniority provisions, including advance consultation with the union committee on questions of layoff, promotion and rehiring; and, enlarged bargaining rights for the unions as representatives for all employees.

It was estimated that employees of the industry in Washington, Oregon and California received $1,500,000 additional income annually under the revised terms. The agreement was ratified by a union vote of 6,000 to 3,500.

The new agreement has resulted in bringing the average hourly wage in the Pacific Coast industry to 83.8 cents per hour, the highest in the world and 18.8 cents per hour higher that the average for all other pulp and paper regions in the United States.

The TAPPI Convention

● During 1940 the Pacific Coast industry, for the second time, acted as host to the National Fall Meeting of the Technical Association of the Pulp & Paper Industry, known as TAPPI. The meeting was held in Seattle, August 20-23rd inclusive, and drew a large number of men from the industry in all regions. The first Fall Meeting of National TAPPI was held in Portland, September, 1934. The meeting sponsored by the Pacific Section of TAPPI, was fully covered in the August and September issues of PACIFIC PULP & PAPER INDUSTRY.

The Pacific Section carried forward its regular program of dinner meetings, holding six during 1940; at Tacoma in January, Everett in February, Portland in March, Port Angeles in April, Portland again in October and Everett in November.

The Shibley Award of $50, presented by the Pacific Section of TAPPI for the best paper delivered at the dinner meetings during the preceding season by one of the younger men in the industry, was awarded to Cecil L. Triplett of the Hawley Pulp & Paper Company for his paper "A Routine Test for the Organic Matter in Sulphite Liquors." Presentation was made at the national meeting in Seattle.

The Pacific Coast Division of the American Pulp & Paper Mill Superintendents Association cooperated with the Pacific Section of TAPPI by cancelling the annual June meeting which is held jointly with TAPPI, in order not to conflict with the national meeting in August.

The Superintendents held their annual December meeting at the Hotel Monticello in Longview.

At the meetings of both associations the high standard of papers previously established, was fully maintained and together with the discussions, the programs constituted a very valuable contribution to the knowledge of the industry on the Pacific Coast.

Mill Improvements

● Space does not permit listing the multitude of improvements made by the industry during 1940. Improved business conditions resulted in expenditures for new equipment, new buildings and for the adoption of more modern methods.

Both pulp and paper production expanded. Capacity rose likewise through the elimination of bottlenecks in productive equipment.

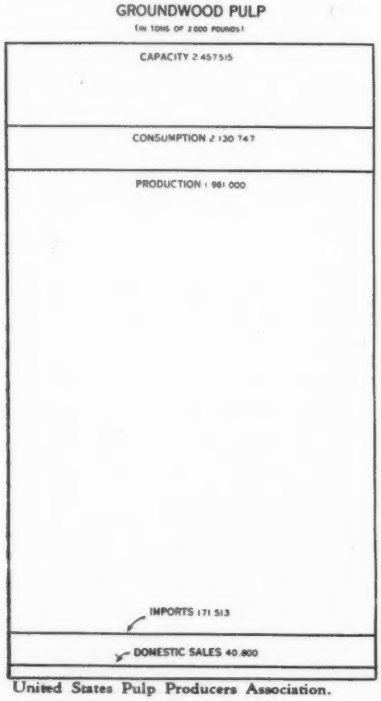
Pulp producing capacity rose from 7,638 short tons to 7,878 short tons daily and paper capacity went up from 5,446 short tons to 5,671 short tons on daily basis. The pulp producing capacity of Pacific Coast mills at the close of 1940 was 285 per cent higher than the 2,045 short tons daily capacity in 1929, and paer producing capacity was 176 per cent higher than the 2,056 short tons daily capacity in 1929.

A little increased production here and a little there in the aggregate amounts to a sizable figure for the industry as a whole. The largest expansion of the year was the enlargement of the Puget Sound Pulp & Timber Company's unbleached sulphite pulp mill at Bellingham, Washington, from 280 to 450 short tons per day.

Scott Paper Company Enters Field

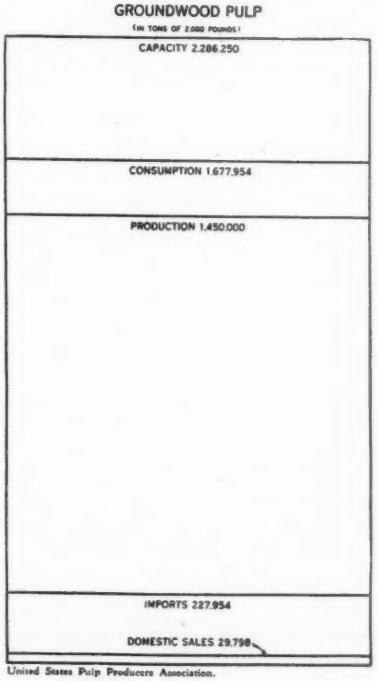
● During 1940 a new operator entered the Pacific Coast pulp industry. The Scott Paper Company of Chester, Pennsylvania, bought the Coos Bay Pulp Corporation unbleached sulphite pulp mill at Empire, Oregon, in June, and in October purchased the Anacortes, Washington, unbleached sulphite pulp mill of the Puget Sound Pulp & Timber Company.

1940

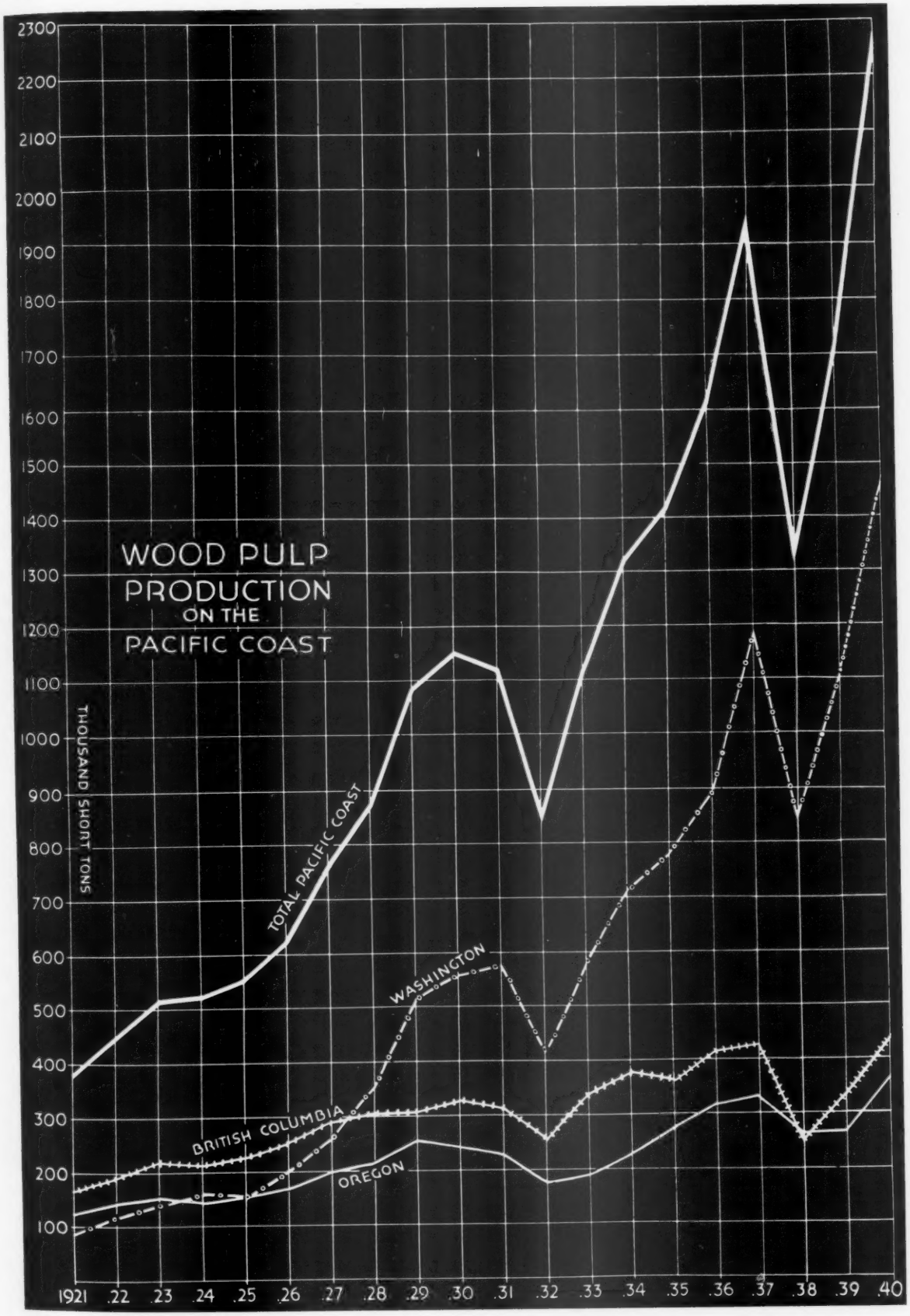


United States Pulp Producers Association.

1939



United States Pulp Producers Association.


WOOD PULP PRODUCTION ON THE PACIFIC COAST
THOUSAND SHORT TONS
TOTAL PACIFIC COAST
WASHINGTON
BRITISH COLUMBIA
OREGON
2300
2200
2100
2000
1900
1800
1700
1600
1500
1400
1300
1200
1100
1000
900
800
700
600
500
400
300
200
100
1921 .22 .23 .24 .25 .26 .27 .28 .29 .30 .31 .32 .33 .34 .35 .36 .37 .38 .39 .40

Paper and Paperboard Production Again Sets New Records in 1940

Paper and Paperboard Production of 14,372,000 tons was 6.5% higher than in 1939—26.8% higher than in 1938 and 12% greater than in 1937—U. S. Newsprint production gained 7.9%

THE consumption of paper and paperboard of all grades in the United States during 1940 set a new record along with production. The estimated consumption by the American Paper & Pulp Association was 16,620,632 short tons. This was 690,283 short tons higher or 4.3 per cent more than the consumption recorded in 1939 when the total was 15,930,349.

But the 1940 consumption figure was 22.9 per cent or 3,096,282 short tons higher than the paper consumption in 1938 which amounted to 13,524,350 short tons.

Compared with 1937 the gain in 1940 was not so large. The increase in 1940 over 1937 was 3.7 per cent, 588,905 short tons more than the 16,031,727 short tons consumed in the former year.

Production of all grades as estimated by the Association for 1940 aggregated 14,372 short tons, a gain of 6.5 per cent over 1939's total of 13,493,476 short tons. All grades of paper except paperboard were 5.9 per cent higher in 1940 than in 1939 with a production of 7,822,000 short tons against 7,388,492 short tons.

The recovery in production of all grades from the 1938 production of 11,380,814 short tons, amounted to 2,991,186 short tons or 26 per cent.

United States newsprint production increased from 954,259 tons in 1939 to 1,030,000 tons in 1940, a gain of 7.9 per cent. Last year for the first time since 1932 U. S. newsprint production went over the million tons mark.

Groundwood papers, including hanging, catalog and others, were manufactured in the amount of 560,000 tons in 1940 while in 1939 the total was 540,342, a gain for last year of 3.6 per cent.

Production Ratios

● The year 1940 began with a production ratio to capacity of 89.1 per cent for January, according to the American Paper & Pulp Association's weekly report. This was 11.6 per cent higher than the 77.5 per cent for January, 1939, and 25.2 per cent above the 63.9 per cent of January, 1938.

From a high start in January the ratio dropped to 84.7 per cent in February and to 82.3 per cent in March. April rose to 84.3 per cent, May to 90 per cent, and June to 92 percent. The percentage dropped in July to 85.3 and in August to 85.1. September was still lower with 81.5 per cent. October was back to 85.5 per cent. November went back to 84.9 per cent and December was the low month of the year with 80.9 per cent, due in part to the holidays. The average for 1940 was 85.6 per cent as compared with 84.9 per cent in 1939, 72.3 per cent for 1938 and 80.6 per cent for 1937.

This year began with 85.1 per cent in January. February rose to 89.4 per cent and March to 92.3 per cent. April jumped to 96.7 per cent and the first two weeks in May averaged 100.5 per cent.

Paperboard Production

● The National Paperboard Association reports produtcion on basis of percents of operation on inch-hours. January, 1940, began with 71 per cent, 11 per cent higher than January of 1939. It declined 1 per cent to 70 per cent in February and another 1 per cent to 69 per cent in March, but was back at 70 in April. May witnessed a rise to 76 per cent and June to 79 per cent. July was off to 72 but August recovered to 74 per cent. September went down to 72 again but October rose to equal the previous high for the year of 79 per cent. November was off two points at 77 and December, a short month, showed but 71 per cent. For the year the average was 73 per cent, 3 points better than 1939, 12 points better than 1938 and equal to 1937.

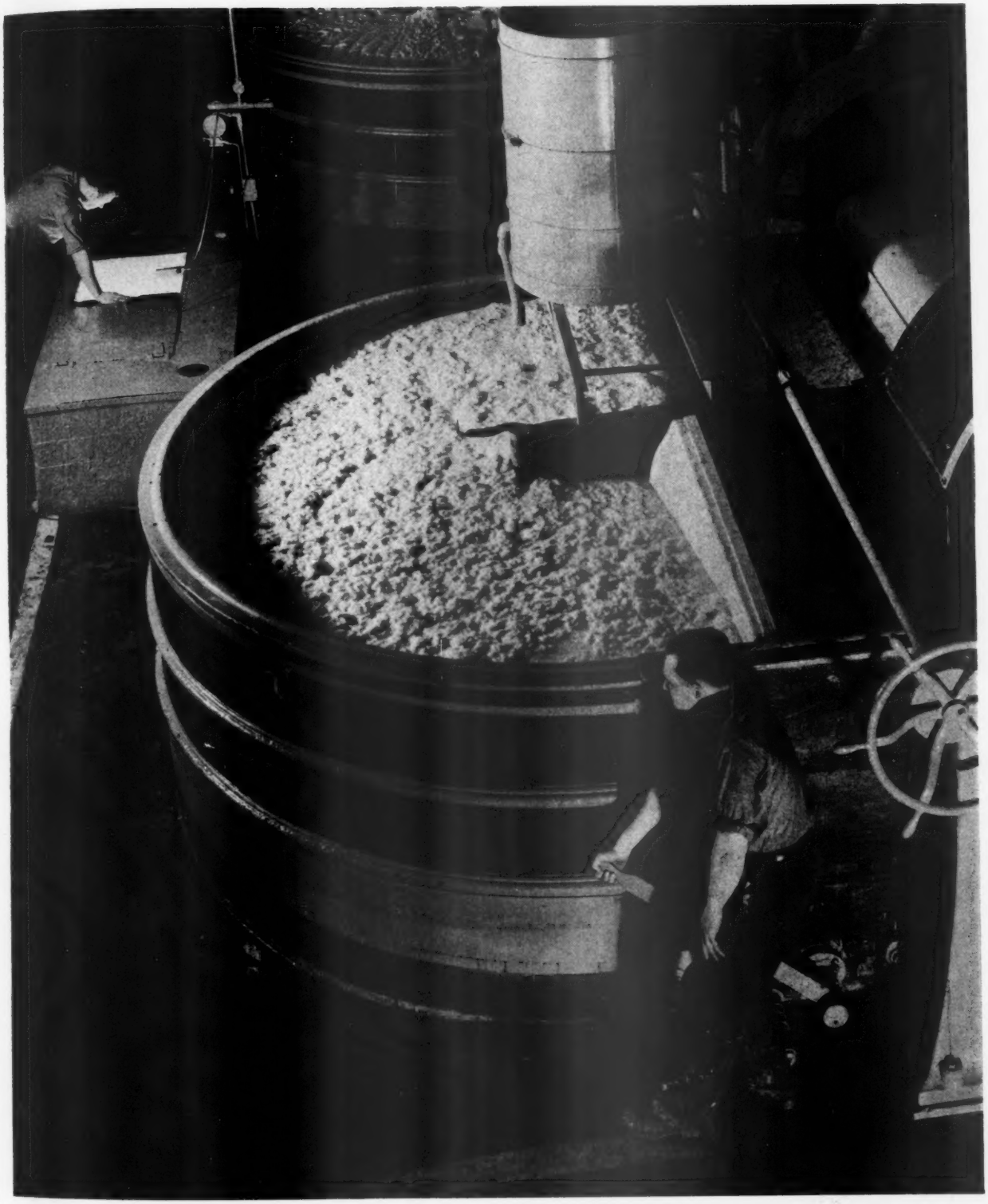
This year the paperboard operating ratios have been higher starting with 75 per cent in January. February recorded 81 per cent, March,

U. S. PAPER PRODUCTION—1935-1940*

(Tons of 2,000 lbs.)

	1935	1936	1937	1938	1939	1940
Total—All Grades	**10,479,095**	**11,975,552**	**12,837,003**	**11,380,814**	**13,493,476**	**14,372,000**
Newsprint	947,717	938,287	975,854	832,331	954,259	1,030,000
Book papers	1,281,870	1,438,046	1,520,523	1,336,814	1,534,591	1,624,000
Paperboard	4,695,890	5,454,637	5,802,036	5,103,767	6,104,968	6,550,000
Wrapping	1,632,054	1,879,323	2,053,387	1,865,856	2,238,993	2,350,000
Writing	507,325	603,853	578,147	481,719	594,594	625,000
Cover	20,806	24,000	24,437	20,216	19,401	20,500
Tissue	473,314	494,721	540,152	548,943	665,723	720,000
Absorbent	95,179	105,000	138,064	126,320	118,717	123,000
Building	440,704	549,701	608,086	570,454	654,924	690,000
All Other	177,192	238,117	596,317	494,394	607,306	66,000

*Bureau of Census, U. S. Department of Commerce, Census of Manufacturers for 1935, 1936, 1937, 1938 and 1939 data. 1940 estimates by the American Paper and Pulp Association and allied associations.



Courtesy Crown Zellerbach Corporation.

82 per cent; April, 83 per cent, and the first two weeks of May recorded 83 and 84 per cent, respectively.

Book paper production of 1,624,000 tons in 1940 was 5.8 per cent higher than the 1,534,591 tons produced in 1939. This was a new high mark for the book paper manufacturers. Text paper, with 13,500 tons against 12,339 tons in 1939 and cover paper with 20,500 tons against 19,401 tons are frequently grouped under the heading of book papers. Added together the three make a total of 1,637.500 tons for 1940 against 1,546,930 tons for 1939.

Production of writing paper last year totaled 625,000 tons as com-

pared with 594,594 tons in 1939, an increase of 5.1 per cent or 30,406 tons. The writing paper grades include rag content, sulphite bonds and other chemical wood pulp grades.

Wrapping paper production last year totaled 2,350,000 tons against 2,238,993 tons in 1939. The gain was 111,007 tons or 4.9 per cent. This group includes sulphite and kraft wrapping and bag papers..

The tissue paper grades, including toilet, towel and all others attained a tonnage of 720,000 tons last year against 665,723 tons in 1939 an increase of 54,277 tons or 8.1 per cent.

Absorbent paper production last year reached 123,000 tons or 3.6 per cent. Building papers with 690,000 tons ran 44,076 tons higher in 1940 than in 1939 when 645,924 tons were produced. The increase was 6.9 per cent.

Paperboard production stepped up to 6,500,000 tons from 6,104,968 tons in 1939, a gain of 445,052 tons or 7 per cent.

Said Grafton Whiting, statistician for the National Paperboard Association, in his written comments on the industry in 1940: "The paperboard industry during 1940 surpassed all records for total production, with an increase of 7 per cent over 1939, the previous high year. For six successive years, with the exception of 1938, substantial gains have been made in this branch of the paper industry.

"Paperboard is generally considered one of the divisions of the paper industry, and rightly so, since its product is made on the same types of machines and, for the most part, of like materials. The paper industry as a whole has made rapid progress during the past 10 years, with a growth in per capita consumption from 165 pounds in 1930 to 205 pounds in 1939. The average yearly increase, using the method of least squares, is 3.1 per cent, or 320,000 tons added each year.

"Paperboard ten years ago accounted for 40 per cent of the total paper industry output. Last year it was over 45 per cent and the average yearly growth was 4.5 per cent, or 201,000 tons, compared with 1.9 per cent or 119,000 tons for the paper grades.

"The 1939 Census of Manufactures, issued by the Department of Commerce, shows the following as to paper and paperboard:

"Paperboard produced 45.2 per cent of the total with 29.3 per cent of the value, the average value per ton being $40.72.

"Wrapping paper produced 16.6 per cent of the tonnage, 20.6 per cent of the value and an average value of $77.90 per ton.

"Book papers produced 11.4 per cent of the tonnage, 16.4 per cent of the value, with an average value per ton of $90.48.

"Newsprint produced 7.1 per cent of the tonnage, 4.7 per cent of the value with an average value per ton of $41.67.

"Writing paper produced 4.4 per cent of the tonnage worth 9.9 per cent of the total value, with an average value per ton of $141.23. All other papers accounted for 15.3 per cent of the tonnage and 19.1 per cent of the value.

"Although paperboard is the lowest in value per ton, according to the census valuation, it is the largest division both in total tons and value of output.

Paperboard Grades

● "Analysis of the paperboard group of mills shows two major divisions of output based upon use to which the board is put; namely, Container boards and Boxboards. Container boards are used for making corrugated and solid fibre shipping containers which are in common use for shipments by freight, express and parcel post. A further subdivision separates Container boards into liners, or the outer facings; straw, etc., commonly called .009 corrugating

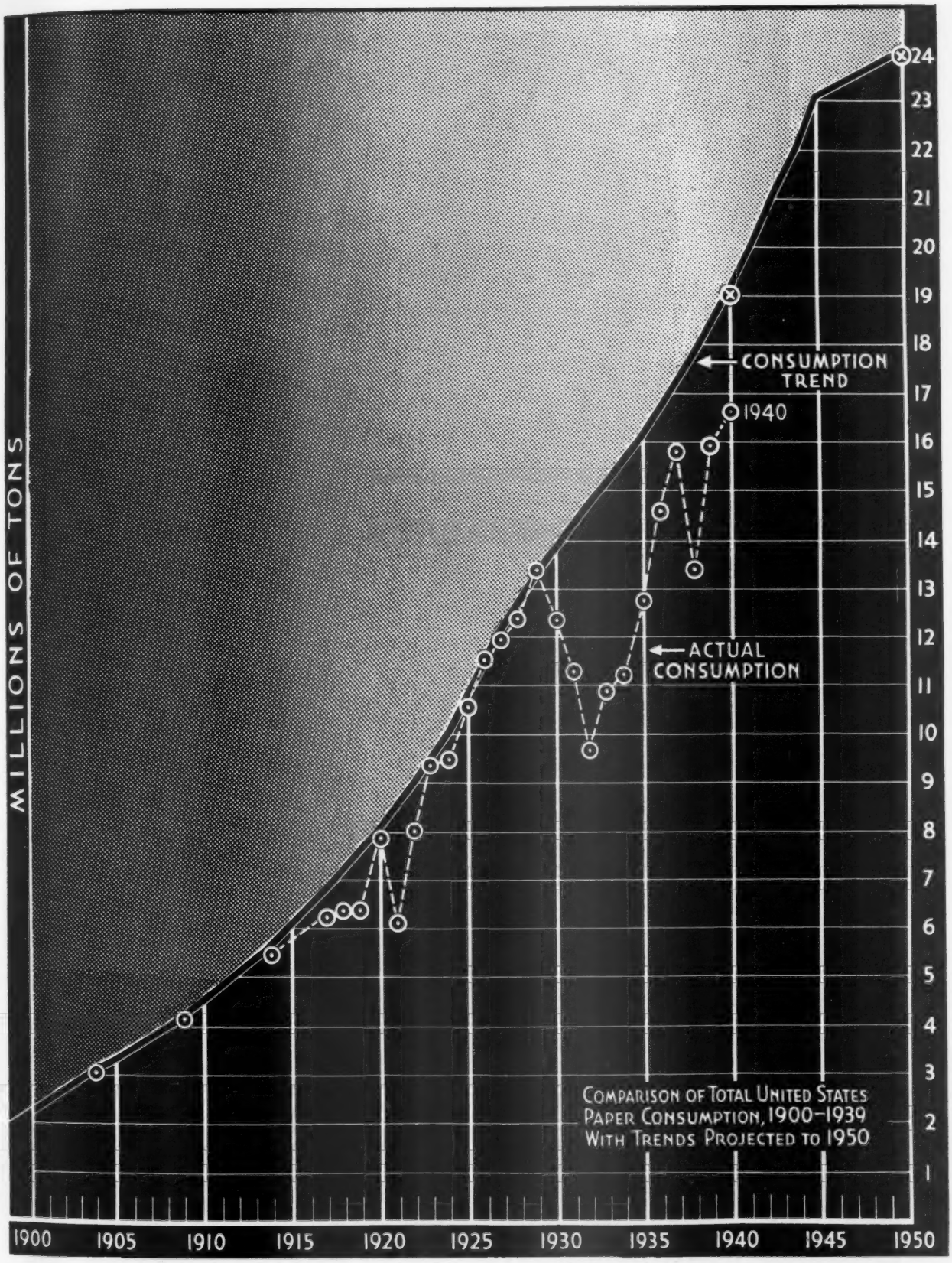
UNITED STATES

Paper and Woodpulp Production and Consumption
Consumption of Domestic and Imported Pulpwood and Total Pulpwood Consumption
Specified Years, 1899-1940

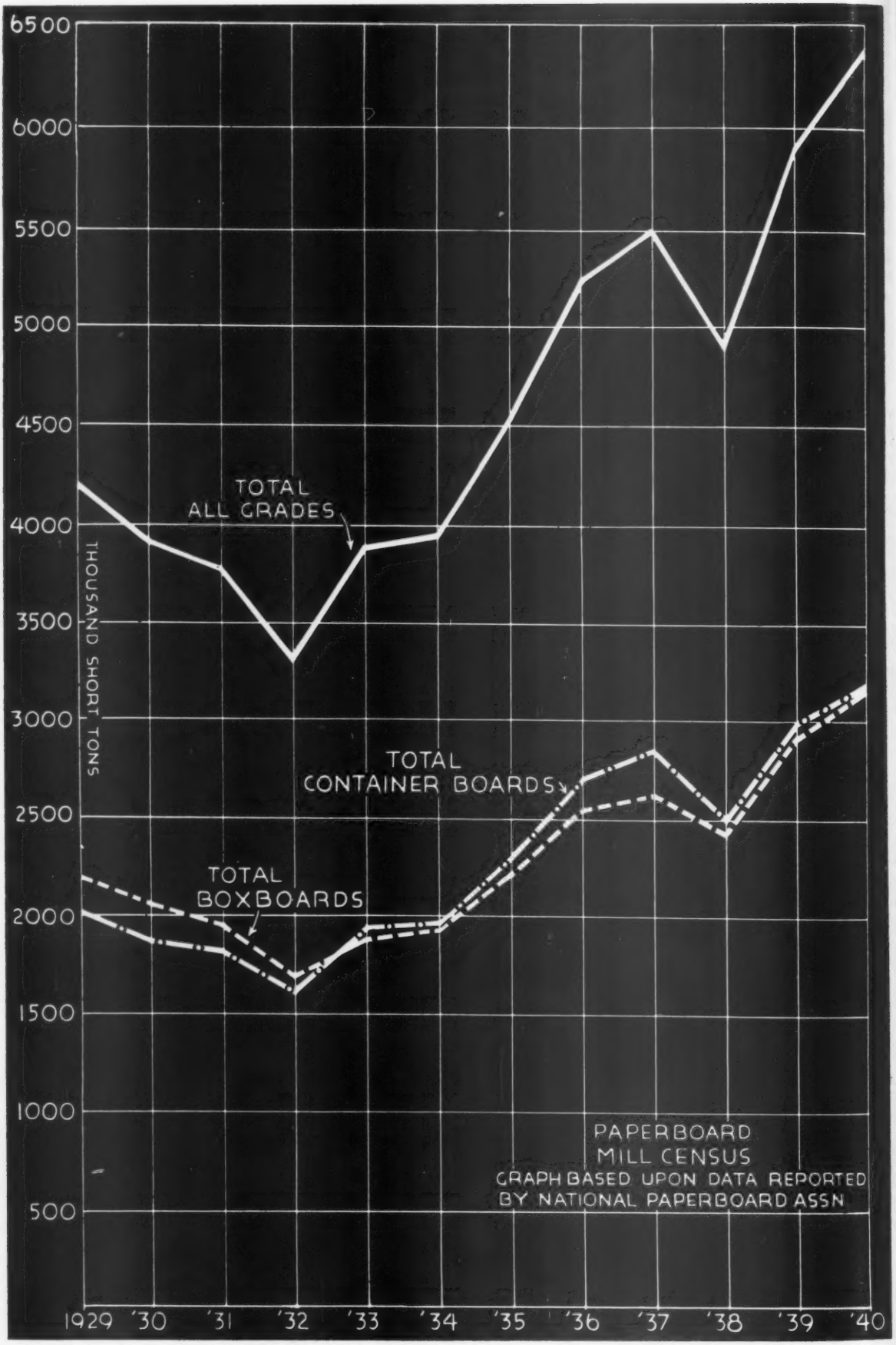
Year—	PAPER		WOODPULP		CONSUMPTION OF PULPWOOD		
	Production (tons)	Consumption (tons)	Production (tons)	Consumption (tons)	Domestic (cords)	Imported (cords)	Total (cords)
1899	2,167,593	2,158,000	1,179,525	1,216,254	1,617,093	369,217	1,986,310
1904	3,106,696	3,049,824	1,921,768	2,091,006	2,477,099	573,618	3,050,717
1909	4,216,708	4,224,000	2,495,523	2,856,593	3,207,653	793,954	4,001,607
1914	5,270,047	5,496,164	2,893,150	3,556,377	3,641,063	829,700	4,470,763
1917	5,919,647	6,255,725	3,509,939	4,148,600	4,706,327	773,748	5,480,075
1918	6,051,523	6,387,066	3,313,861	3,869,746	4,506,276	744,518	5,250,794
1919	6,190,361	6,479,490	3,517,952	4,113,911	4,445,817	1,032,015	5,477,832
1920	7,334,614	7,846,827	3,821,704	4,696,035	5,014,513	1,099,559	6,114,072
1921	5,356,317	6,053,915	2,875,601	3,544,218	3,740,406	816,773	4,557,179
1922	7,017,800	8,007,088	3,521,644	4,756,105	4,498,808	1,050,034	5,548,842
1923	8,029,482	9,339,573	3,788,672	5,149,695	4,636,789	1,236,081	5,872,870
1924	----------	----------	3,723,266	5,216,265	4,720,191	1,047,891	5,768,082
1925	9,182,204	10,590,090	3,962,217	5,590,304	5,005,445	1,088,376	6,093,821
1926	----------	----------	4,394,766	6,096,279	5,489,517	1,276,490	6,766,007
1927	10,002,070	11,915,233	4,313,403	5,960,865	5,526,889	1,224,046	6,750,935
1928	10,403,338	12,447,841	4,510,800	6,239,641	5,750,689	1,409,411	7,160,100
1929	11,140,235	13,347,925	4,862,885	6,704,341	6,411,566	1,233,445	7,645,011
1930	10,169,140	12,314,819	4,630,308	6,463,185	6,089,852	1,105,672	7,195,524
1931	9,381,840	11,403,850	4,409,344	6,005,718	5,896,446	826,320	6,722,766
1932	7,997,872	9,733,764	3,760,267	5,083,446	4,891,424	741,699	5,633,123
1933	9,190,017	10,919,391	4,293,344	6,027,088	5,933,295	628,379	6,561,674
1934	9,186,266	11,185,682	4,281,428	5,969,633	5,822,681	973,978	6,796,659
1935	10,506,195	12,490,886	4,944,226	6,877,869	6,590,942	1,037,332	7,628,274
1936	11,670,000	14,546,046	5,695,219	7,420,829	7,506,156	1,209,760	8,715,916
1937	12,600,000	15,798,362	6,617,184	8,692.489	8,870,932	1,522,868	10,393,800
1938	11,327,000	13,488,300	5,933,060	7,975,000	7,900,053	1,293,938	9,193,991
1939	13,493,476	15,930,349	7,153,478	9,058,415	9,685,592	1,130,874	10,816,466
1940	14,372,000	16,620,632	8,981,000	9,724,643	12,564,180	1,435,820	14,000,000

Source: Bureau of the Census, United States Forest Service and A. P. & P. A. Bureau Foreign and Domestic Commerce, U. S. Pulp Producers Association.

*Pulpwood requirement is a computed figure which represents the pulpwood required to manufacture the total paper consumption of a year.



TREND OF PAPER CONSUMPTION is toward a United States paper consumption of 24,000,000 tons in 1950 . . . This graph is drawn to an arithmetical vertical scale from a ratio scale graph prepared in April, 1938, by Charles W. Boyce, at that time Executive Secretary of the American Paper & Pulp Association.


6500
6000
5500
5000
4500
4000
3500
3000
2500
2000
1500
1000
500
THOUSAND SHORT TONS
TOTAL ALL GRADES
TOTAL CONTAINER BOARDS
TOTAL BOXBOARDS
PAPERBOARD MILL CENSUS
GRAPH BASED UPON DATA REPORTED BY NATIONAL PAPERBOARD ASSN
1929
'30
'31
'32
'33
'34
'35
'36
'37
'38
'39
'40

PAPERBOARD PRODUCTION BY ZONES
1940
Short Tons

Zone	Liners	Corr. Material	Chip	Folding Boxboard	Set-Up Boxboard	Other	Total
New England	25,400	4,700	7,600	163,500	62,600	69,600	333,400
Middle Atlantic	451,200	172,600	60,800	398,900	341,700	331,100	1,756,300
Lake States	445,200	361,200	132,800	662,200	140,600	424,700	2,166,700
South	874,300	286,800	13,400	38,900	17,500	211,600	1,442,500
Western	169,700	78,100	63,700	132,600	30,400	103,000	577,500
Total	1,965,800	93,400	278,300	1,396,100	592,800	1,140,000	6,276,400

Source: National Paperboard Association. The western group includes all states west of Mississippi River with the exception of Texas, which is included in the southern group.

PAPERBOARD PRODUCTION BY ZONES
1939
Short Tons

Zone.	Liners	Corr. Material	Chip	Folding Boxboard	Set-Up Boxboard	Other	Total
New England	25,900	3,800	6,000	151,000	70,000	59,000	316,800
Middle Atlantic	431,800	151,800	65,300	395,900	316,400	295,000	1,656,200
Lake States	448,600	341,500	140,100	659,500	150,500	381,700	2,121,900
South	809,200	266,300	14,000	27,200	18,500	122,100	1,257,300
Western	162,400	74,500	59,100	137,100	29,500	89,500	552,100
Total	1,877,900	837,900	284,500	1,370,700	585,700	947,600	5,904,300

Source: National Paperboard Association. The western group includes all states west of the Mississippi River with the exception of Texas, which is included in the southern group.

PAPERBOARD MILL CENSUS
In Tons

CONTAINER BOARDS

GRADES	1931	1932	1933	1934	1935	1936	1937	1938	1939	1940
Liners - Jute	726,200	604,000	735,100	737,300	888,700	1,029,300	1,047,600	674,900	794,300	796,300
Liners-Kraft Cyl.	194,800	171,300	227,000	232,900	262,600	285,900	290,800	238,900	279,800	246,200
Kraft Four.	150,900	190,300	252,300	257,700	289,600	389,600	461,600	638,200	803,800	923,300
Total Kraft	345,700	361,600	479,300	490,600	552,200	675,500	752,400	877,100	1,083,600	1,169,500
Total Liners	1,071,900	965,600	1,214,400	1,227,900	1,440,900	1,704,800	1,800,000	1,552,000	1,877,900	1,965,800
Chip-Corrugating	63,800	53,000	61,700	66,100	70,200	97,700	96,200	76,500	75,900	75,500
Solid Fibre	295,500	228,100	242,900	209,100	210,700	237,000	246,800	177,800	208,600	202,800
Total Chip	359,300	281,100	304,600	275,200	280,900	334,700	343,000	254,300	284,500	278,300
.009 Straw, Etc.	343,800	299,700	386,200	394,000	472,800	556,800	589,200	461,400	574,900	611,400
.009 Kraft	40,000	73,300	73,700	89,000	114,400	141,900	148,300	212,100	263,000	292,000
Total .009	383,800	373,000	459,900	483,000	587,200	698,700	737,500	673,500	837,900	903,400
TOTAL	1,815,000	1,619,700	1,978,900	1,986,100	2,309,000	2,738,200	2,880,500	2,479,800	3,000,300	3,147,500

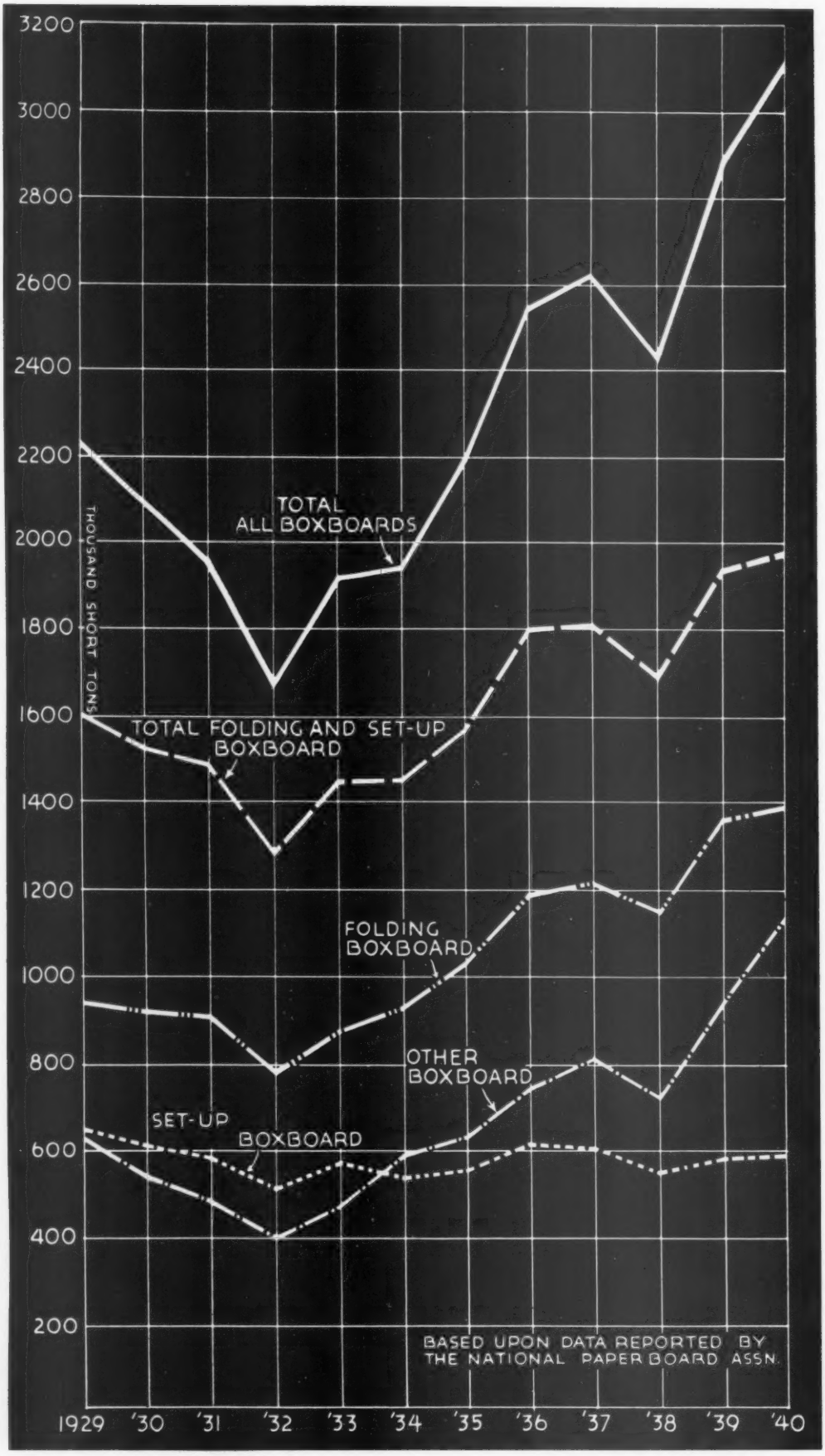
BOXBOARDS

Folding Box	909,100	778,300	883,600	926,800	1,034,600	1,198,400	1,223,800	1,150,400	1,370,700	1,396,100
Set-up Box	554,600	479,900	551,700	506,000	531,100	587,700	570,000	518,800	585,700	592,800
Total	1,463,700	1,258,200	1,435,300	1,432,800	1,565,700	1,786,100	1,793,800	1,669,200	1,956,400	1,988,900
Other	490,100	411,100	490,000	510,700	642,800	770,900	839,200	753,600	947,600	1,140,000
TOTAL	1,953,800	1,669,300	1,925,300	1,943,500	2,208,500	2,557,000	2,633,000	2,422,800	2,904,000	3,128,900

SUMMARY

JUTE,Chip,Boxboard	3,365,000	2,837,300	3,322,500	3,301,900	3,789,300	4,416,800	4,534,700	3,740,900	4,430,800	4,591,300
Straw, Etc.	403,800	451,700	581,700	627,700	728,200	878,400	978,800	1,161,700	1,473,500	1,685,100
KRAFT,Liner,.009 Etc										
TOTAL ALL GRADES	3,768,800	3,289,000	3,904,200	3,929,600	4,517,500	5,295,200	5,513,500	4,902,600	5,904,300	6,276,400

Issued April 10, 1941 NATIONAL PAPERBOARD ASSOCIATION


3200
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2200
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1800
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1400
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200
THOUSAND SHORT TONS
TOTAL ALL BOXBOARDS
TOTAL FOLDING AND SET-UP BOXBOARD
FOLDING BOXBOARD
OTHER BOXBOARD
SET-UP BOXBOARD
BASED UPON DATA REPORTED BY THE NATIONAL PAPER BOARD ASSN.
1929
'30
'31
'32
'33
'34
'35
'36
'37
'38
'39
'40

material, from which the inner fluted member is made; and chip, used for certain parts of corrugated containers, and for the inner piles of solid fibre boxes.

"Boxboards are composed of a wide variety of grades, colors and finishes, suitable for fabricating folding cartons, set-up or rigid paperboard boxes and specialties. From the charts a comparison may be made of the relative volume of each division. Container boards and boxboards are not far apart in total tonnage, with boxboards tending to gain an equal position with container grades. If Container boards were computed on an area basis, which is the unit of measurement when the board is used, there would be a larger gain than is here indicated. The reason for this is found in the fact that kraft boards, lighter in weight per thousand square feet than jute boards, are being supplied in greater quantity each year.

"In the Boxboard division, the folding grades are faring better than the set-up grades. This is due in part to the ease with which folding cartons can be stored and handled as contrasted with the set-up box already formed by the fabricator. The subdivision, "All Other," has experienced the largest growth because of the many new uses to which paperboard is being put and the endeavor on the part of the mills to enter new fields heretofore supplied with a different type of material . . ."

Waste Papers

● "The amount of waste paperstock consumed in the United States during 1940 is estimated to be between 4,250,000 and 4,500,000 tons. The estimated total domestic production of paper and paperboard is 14,340,000 tons. Added to this is the amount of imports less the exports which shows a net amount of about 2,120,000 tons, and gives 16,460,000 tons gross available. This indicates that between 25 and 30 per cent of the available tonnage was reclaimed and used again in mill production.

"The amount of waste paper collected is largely in proportion to the price paid, since with high prices it is possible and profitable to the supplier to ship paper in from outlying sections which otherwise would be unavailable. Likewise, the housewife will save papers instead of destroying them if offered a sufficient price. Seasonal variations occur due to weather conditions, particularly in the winter months. The spring and fall colections are the heaviest.

"The paperboard industry is the largest user of waste paperstock, although some grades are made almost entirely of prime pulp. Of the waste-using grades, the average furnish

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March 31, 1941

Preliminary report

U. S. DEPARTMENT OF COMMERCE
Bureau of the Census
Washington

CENSUS OF MANUFACTURES: 1939

Sixteenth Census of the United States: 1940

Manufactures
Industry No. 720

Materials Consumed in the Paper and Paperboard Mills Industry

This report, released today by Acting Director Vergil D. Reed, Bureau of the Census, Department of Commerce, gives statistics on the principal materials consumed by the establishments classified in the Paper and Paperboard Mills industry for the years 1939, 1935, and 1929.

The table below presents statistics on materials consumed by kind, quantity, and cost. The figures for 1939 are preliminary, subject to revision.

Principal Materials Consumed, by Kind, Quantity, and Cost: 1939, 1935, and 1929

	1939		1935[1]		1929	
	Quantity (short tons)	Cost	Quantity (short tons)	Cost	Quantity (short tons)	Cost
Wood pulp, total[2]	8,650,423	$276,518,844	6,442,178	$210,548,372	6,289,318	$302,923,324
Mechanical	1,749,118	34,445,044	1,536,848	28,593,823		
Soda	515,650	22,211,988	[3]561,141	[3]21,015,248		
Sulphite	2,912,704	131,719,989	2,368,158	106,575,669	(4)	(4)
Sulphate	3,354,338	86,505,597	1,976,031	54,363,632		
Semichemical	118,613	1,636,226	(5)	(5)		
Manila stock (rope, jute, bagging, etc.)	64,149	2,232,647	50,322	1,705,107	128,800	6,115,292
Rags	468,287	14,808,348	501,589	15,372,616	739,422	33,249,233
Waste paper (paper stock)	4,366,257	57,293,159	3,587,390	40,538,476	3,841,942	74,232,577
Straw	512,993	3,400,220	416,838	3,129,186	575,263	5,197,706
Other fiber (cotton, etc.)	115,173	3,186,458	60,847	1,840,563	(4)	(4)
Casein	17,587	5,244,243	[6]14,805	[6]2,754,320	18,451	4,346,664
Clay	427,481	7,480,640	[6]351,501	[6]5,347,921	470,528	7,120,281
Rosin	35,915	1,940,926	25,129	1,550,952	38,390	2,155,114
Rosin sizing	94,325	4,980,259	78,087	4,050,834	99,443	6,567,703
Other nonfibrous materials (alum, starch, etc.)	571,115	22,928,742	[6]409,819	[6]16,291,698	(4)	(4)

1/ Incomplete; does not include data for 14 mills, reporting products valued at $8,993,675 (1.3 percent of the total value of products for the Paper industry), which did not report chief materials consumed. This does not apply, however, to the figures for pulp produced for consumption in paper mills operated in conjunction with pulp mills.

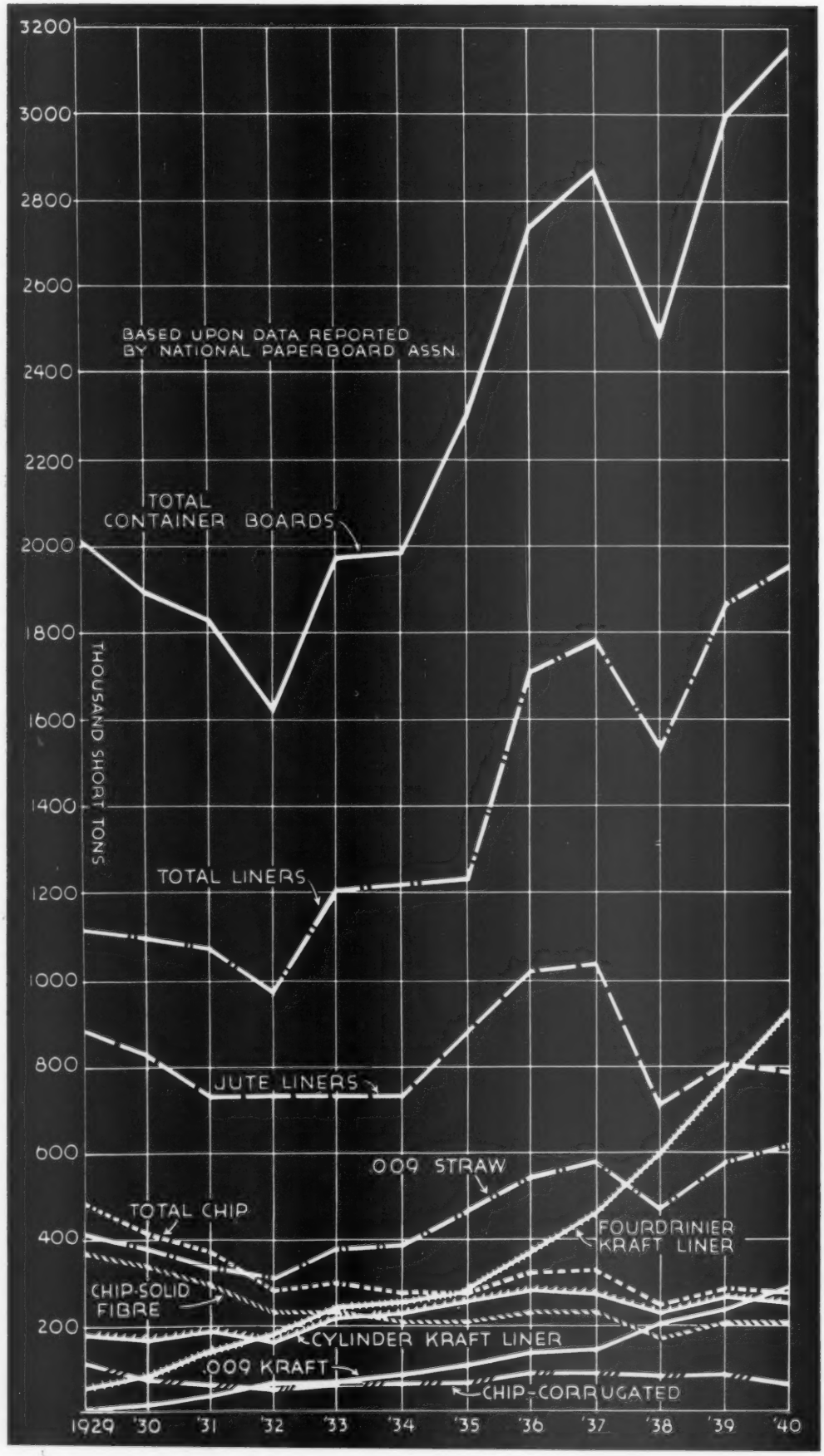
2/ Includes data for pulp produced in pulp mills operated in conjunction with paper mills as follows: For 1939, 4,608,850 tons; for 1935, 4,076,841 tons; for 1929, 4,059,016 tons.

3/ Includes data for semichemical; also screenings, 23,347 tons costing $240,413; and kind not specified, 18,208 tons costing $537,447.

4/ No data.

5/ Included in figures for soda.

6/ Revised.


3200
3000
2800
2600
2400
2200
2000
1800
1600
1400
1200
1000
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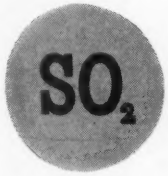
600
400
200
THOUSAND SHORT TONS
BASED UPON DATA REPORTED BY NATIONAL PAPERBOARD ASSN.
TOTAL CONTAINER BOARDS
TOTAL LINERS
JUTE LINERS
.009 STRAW
TOTAL CHIP
FOURDRINIER KRAFT LINER
CHIP-SOLID FIBRE
CYLINDER KRAFT LINER
.009 KRAFT
CHIP-CORRUGATED
1929
'30
'31
'32
'33
'34
'35
'36
'37
'38
'39
'40

BEAR BRAND CHEMICALS Made on the West Coast from WEST COAST MATERIALS

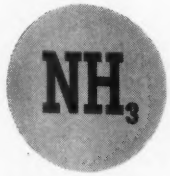
CHLORINE

Liquefies at −34.6°C. at atmospheric pressure. Not over 1.4 lbs. moisture per ton. Total residue not over 15 grams per 100 lbs.



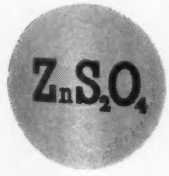
SULPHUR DIOXIDE

Colorless gas at normal temperatures and pressures, liquefies at −10°C. at atmospheric pressures.



ANHYDROUS AMMONIA

Liquefies at −33.4°C. atmospheric pressure. Contains no objectionable impurities.



ZINC HYDROSULPHITE

A fine white powder. Easily oxidizable in air. Very slightly water soluble.

The Great Western Division of Dow uses West Coast sources of raw material and West Coast labor to produce its BEAR BRAND chemicals—so widely in demand throughout the Pacific pulp and paper industry.

Products of the largest plant of its kind on the Pacific Coast, BEAR BRAND chemicals afford paper manufacturers the twofold advantage of uniform high quality and immediate availability.

Profit by this opportunity to effect economies in time and operating efficiency—specify BEAR BRAND chemicals.

GREAT WESTERN DIVISION
THE DOW CHEMICAL COMPANY

San Francisco, California, U.S.A. DOW Plant: Pittsburg, Calif.

New York, Seattle, Los Angeles

Working with you for America

March 20, 1941

Preliminary report

U. S. DEPARTMENT OF COMMERCE
Bureau of the Census
Washington

CENSUS OF MANUFACTURES: 1939

Sixteenth Census of the United States: 1940

Manufactures
Industry Nos. 711, 720, and 794

Expenditures for Plant and Equipment for the Paper and Paperboard Mills, Pulp Mills, and Pulp Goods (Pressed, Molded) Industries

Establishments which accounted for the greater part of the value of products manufactured in the Paper and Paperboard Mills, Pulp Mills, and Pulp Goods (Pressed, Molded) industries reported capital expenditures for plant and equipment for 1939 as follows: Paper and Paperboard Mills, reporting 94.7 percent of the value of products manufactured, expended $37,501,951 for plant and equipment; Pulp Mills reported 79.2 percent, expended $9,310,064; Pulp Goods (Pressed, Molded) reported 80.5 percent, expended $73,565, according to preliminary figures compiled from the returns of the 1939 Census of Manufactures, taken in 1940, and released today by Acting Director Vergil D. Reed, Bureau of the Census, Department of Commerce. The remaining establishments, accounting for 5.3 percent, 20.8 percent, and 19.5 percent of the total values of the products of each of the three industries specified, did not report any expenditures for plant and equipment during 1939.

The Bureau of the Census obtained for the first time information on the expenditures for plant and equipment by manufacturing establishments. Such establishments were requested to report charges to capital account for new depreciable assets at cost value.

Data were supplied upon the total expenditures for plant, equipment, and real estate during the year under three detailed types:

1. Expenditures for new construction or major alterations of buildings and other fixed plant and structures (buildings, docks, tracks, etc.), including elevators, heating and ventilating equipment, etc., essentially a part of buildings or other fixed structures.
2. Expenditures for new machinery and operating equipment, including all new motors, lathes, punch presses, cranes, automobiles, trucks, railroad rolling stock, office fixtures, furniture, typewriters, billing machines, cash registers, and other movable equipment.
3. Expenditures for plant and equipment acquired in a "used" condition from other owners, and expenditures for land.

The major portion of these expenditures represented purchases of new machinery amounting to $26,112,978, or 69.6 percent of the total expenditures for plant and equipment, for Paper and Paperboard Mills; $6,104,623, or 65.6 percent, for Pulp Mills; and $69,828, or 94.9 percent for the Pulp Goods (Pressed, Molded) industry. The costs of new construction were reported as $9,758,757, or 26 percent of the total expenditures for plant and equipment, by Paper Mills; $2,159,408, or 23.2 percent, by Pulp Mills; and $3,487, or 4.7 percent, by the Pulp Goods industry. The cost of plant equipment acquired in a "used" condition, and expenditures for land, was reported as follows: Paper and Paperboard Mills, $1,136,091, or 3 percent of the total expenditures for plant and equipment; Pulp Mills, $257,130, or 2.8 percent; Pulp Goods industry, $250, or 0.3 percent of the total.

The expenditures for plant and equipment shown in this table include only expenditures reported by establishments engaged in active production during the year 1939. They do not include expenditures by inactive establishments or new establishments whose plants were under construction during the year 1939 but were not completed and actually in use during the year 1939.

Summary statistics for 1939 for each of the three industries are shown in the following table.

	Paper and Paperboard Mills		Pulp Mills		Pulp Goods (Pressed, Molded)	
	Number or amount	Percent of industry total	Number or amount	Percent of industry total	Number or amount	Percent of industry total
Total number of establishments	538	100.0	194	100.0	14	100.0
Number of establishments reporting capital expenditures for plant and equipment	537	84.2	125	64.4	8	57.1
Total value of products	$933,015,664	100.0	$226,851,822	100.0	$3,826,393	100.0
Value of products of establishments reporting expenditures for plant and equipment	883,870,167	94.7	179,561,023	79.2	3,080,597	80.5
Total expenditures for plant and equipment	37,501,951	100.0	9,310,064	100.0	73,565	100.0
Expenditures for new construction, or major alterations of buildings and other fixed plant and structures	9,758,757	26.0	2,159,408	23.2	3,487	4.7
Expenditures for new machinery and operating equipment	26,112,978	69.6	6,104,623	65.6	69,828	94.9
Expenditures for plant and equipment acquired in a "used" condition from other owners and expenditures for land	1,136,091	3.0	257,130	2.8	250	0.3
Expenditures, unclassified	494,125	1.3	788,903	8.5	---	---

is 85 per cent waste paperstock and 15 per cent pulp. During 1940, with the threatened shortage of pulp the sorting of waste papers was given more careful attention, since papers with clean, long fibers were in demand. Substitution of such grades for a part of the prime pulp formerly used has been going on and without loss of appearance or serviceability in the finished product. In some instances, moreover, a saving in cost has resulted.

"It is fair to assume that, with less than 30 per cent of the available supply now being reclaimed, an increase in the collection of waste paper can be made without an undue rise in price, sufficient to meet any emergency demand that might call for a substantial increase in paperboard production. . . ."

Production

● "A census of the paperboard industry is taken each year, including all mills known to have produced paperboard. The totals for the past ten years are as follows:

Year	Tonnage
1931	3,768,800
1932	3,289,000
1933	3,904,200
1934	3,928,300
1935	4,516,000
1936	5,290,600
1937	5,510,000
1038	4,896,100
1939	5,904,000
1940 (est.)	6,300,000

"The 1940 estimated production is 396,000 tons or about 7 per cent above 1939, the previous high. Another record which was broken was that for continuous operation at high levels. For a period of 33 weeks, barring holidays, production exceeded 120,000 tons per week; whereas in 1939 but 15 weeks were above the 120,000-ton figure. A sustained volume for so long a time makes for efficient operation, provides regular employment, permits better planning and lower costs.

"The tons made per one per cent of activity is not a significant figure in itself, but does serve to compare one year with another. In 1938, the tons per one per cent of activity were 80,260; in 1939, 83,150; and in 1940, 86,300. This continued gain is due not only to the bringing in of new and faster running machines and placing some of the older ones in reserve, but also to improvements and betterments in existing plants.

"The kraft mills making liners and corrugating material, particularly in the South, have been a factor in this increase, and their output has steadily grown. In 1938 the total kraft liner production exceeded that of the jute liners for the first time. The 1940 estimate of totals shows kraft liner at 1,169,000 tons with jute at 794,000 tons, or 47 per cent greater tonnage for kraft. As previously noted, the gain would be even more pronounced if based on square foot area instead of on tonnage.

"The development of the kraft mills in the South with their pulp producing units, which a few years ago was looked upon as a dangerous threat to the stability of the industry by over expansion of capacity, has proved to be a blessing in disguise. During 1939 there were imported from Europe 485,200 tons of kraft pulp, whereas today practically none is being received and the burden of supply has fallen mainly upon the southern kraft mills. Their ability to meet this demand is attested by the fact that the paperboard mills dependent upon purchase pulp in no instance have had to curtail production for want of this raw material.

"In years such as 1939 and again in 1940, where volume is heavy and prices are fair, substantial sums are set aside for investment in plant and equipment. These are aimed to increase production, lower costs and improve quality. The effects of these improvements are cumulative and

UNITED STATES

Paper Board—Operation, Production, Orders[1]

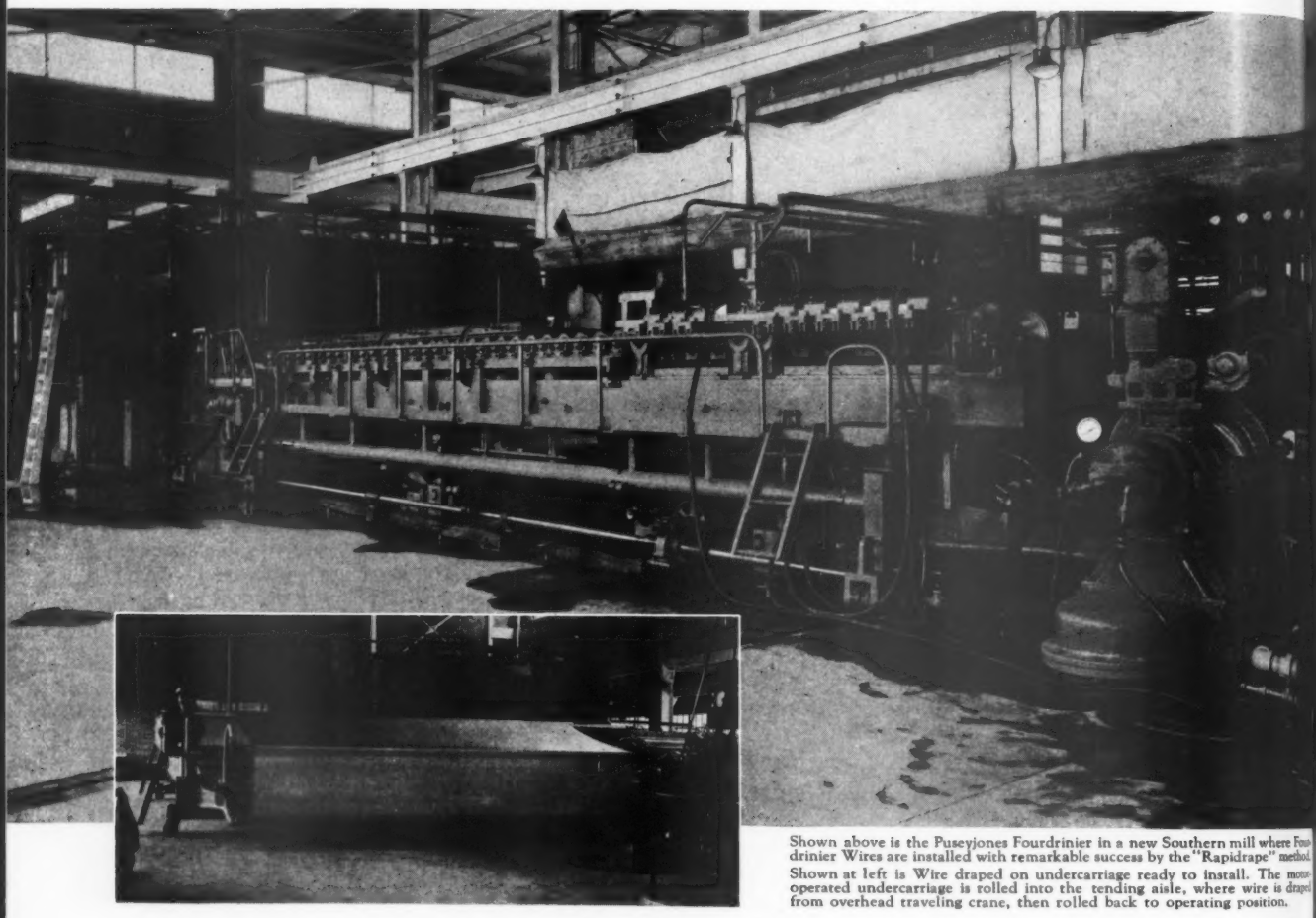
(.012 of an inch or more in thickness)

Year and Month—1939	—Operation—(Inch hours[1])—(Based on last dryer width) Rated Capacity	Operated	Per Cent of Capacity	—Production—(Short tons)— Rated Capacity	Output	Per Cent of Capacity	New orders (Short tons)	Unfilled orders end month (Short tons)
January	19,335,834	13,867,062	71.7	597,308	430,895	72.1	398,125	140,269
February	17,889,312	12,396,413	69.3	565,031	399,970	70.8	367,897	115,266
March	18,540,444	12,558,594	67.7	588,562	406,992	69.1	392,794	110,039
April	18,540,444	12,778,866	68.9	588,562	417,566	70.9	480,250	166,830
May	19,216,410	14,385,337	74.9	610,305	470,244	77.1	517,221	204,249
June	17,844,246	13,685,848	76.7	566,132	440,725	77.8	437,847	195,037
July	19,153,098	13,360,967	69.8	611,236	429,561	70.3	398,191	160,541
August	19,191,330	13,712,424	71.5	612,130	452,604	73.9	414,966	131,890
September	17,717,406	12,163,049	68.7	565,508	402,548	71.2	399,133	131,242
October	19,058,370	14,421,699	75.7	608,207	473,169	77.8	486,181	140,027
November	18,312,396	13,534,421	73.9	585,385	443,274	75.7	426,614	128,222
December	18,152,700	12,404,966	68.3	581,098	407,629	70.1	393,026	115,143
Total (Year 1940)	**222,951,990**	**159,269,644**	**71.4**	**7,079,959**	**5,175,107**	**73.1**	**5,112,272**	.....
Total (Year 1939)	**224,509,968**	**156,009,731**	**69.5**	**6,842,087**	**4,882,636**	**71.4**	**4,984,774**	.....
Total (Year 1938)	**201,659,468**	**125,473,369**	**62.2**	**6,188,954**	**3,816,502**	**61.7**	**3,827,460**	.....
Total (Year 1937)	**193,449,553**	**143,747,844**	**74.3**	**5,648,035**	**4,293,717**	**76.0**	**4,163,060**	.....
Total (Year 1936)	**176,217,757**	**129,343,411**	**73.4**	**5,001,147**	**3,658,871**	**73.2**	**3,720,996**	.....
Total (Year 1935)	**178,529,564**	**119,579,631**	**67.0**	**4,861,628**	**3,294,055**	**67.8**	**3,281,525**	.....
Total (Year 1934)	**176,800,951**	**105,201,235**	**59.5**	**4,767,029**	**2,839,705**	**59.6**	**2,807,470**	.....
Total (Year 1933)	**165,594,126**	**105,986,270**	**64.0**	**4,619,730**	**2,912,374**	**63.0**	**2,913,370**	.....
Total (Year 1932)	**138,115,824**	**75,979,629**	**55.0**	**3,904,824**	**2,152,045**	**55.1**	**2,148,991**	.....
Total (Year 1931)	**137,218,968**	**91,894,961**	**67.0**	**3,879,836**	**2,556,851**	**65.9**	**2,527,024**	.....
Total (Year 1930)	**139,179,840**	**96,843,592**	**69.6**	**3,917,436**	**2,699,595**	**68.9**	**2,685,373**	.....

[1]Monthly statistics compiled from data furnished by the National Paperboard Association from reports of members, and by manufacturers reporting direct to the Bureau of Census, are pesented in the above tables. These statistics were released by Director W. L. Austin, Bureau of the Census, Department of Commerce.

Rated (24-hour) capacity data for paperboard machines in inch hours hours in this report are based on last dryer width whereas those shown in the reports for 1932 and earlier years were based on maximum trim width. The capacity data vary according to the normal number of working days in each month.

Complete Wire Change in less than one hour with Rapidrap



Shown above is the Puseyjones Fourdrinier in a new Southern mill where Fourdrinier Wires are installed with remarkable success by the "Rapidrape" method. Shown at left is Wire draped on undercarriage ready to install. The motor-operated undercarriage is rolled into the tending aisle, where wire is draped from overhead traveling crane, then rolled back to operating position.

Here is a "stop-watch" record of time and labor saved by the Rapidrape Method for installing Fourdrinier Wires . . . a record made on the 234" Puseyjones Newsprint Machine at Southland Paper Mills, Lufkin (Herty), Texas.

Typical Wire Changing Performance
Lufkin, March 10, 1941.

8:30 a.m. Old wire removed, under-carriage rolled out.
9:05 a.m. New wire draped, under-carriage rolled in.
9:25 a.m. Wire poles removed, breast roll raised.
10:20 a.m. Wash-up, stock on.

Actual wire change—55 minutes

Faster, safer wire changing by the Rapidrape Method means that production formerly lost through long shutdowns is reduced to a minimum.

Rapidrape Wire Handling is being used with equally satisfactory results on the 184" Puseyjones all-purpose Machine at the new Hollingsworth & Whitney Mill, Mobile, Alabama. Recently it has been specified for a new 212" Puseyjones kraft paper Machine.

Be sure that your next machine is equipped with Rapidrape Wire Handling—for speed, labor saving and safety. Write for full details.

THE PUSEY AND JONES CORPORATION

Established 1848. Builders of Paper-making Machinery. Wilmington, Del.

THE SIGN OF TRADE MARK SUPERIOR QUALITY

1941 should show a continuance of the increase in the tons of output. . . ."

Prices

● "Prices of the important grades of paperboard as published by the "Official Board Markets" are given below for January, 1940, and January, 1941, as follows:

Grades	January, 1940	January, 1941
Chip Board	$40.00 @ $42.50	$37.50 @ $40.00
Single Manila Lined Chip	55.00	52.50 @ 57.50
White Patent Coated News	67.50	67.50 @ 72.50
Corrugating Material	0.69 @ 0.72*	0.69 @ 0.72*
Test Liners	1.29 @ 1.30*	1.29 @ 1.30*
Newsboard	47.50	42.50 @ 45.00

* Prices are stated per ton except for Corrugating Material and Test Liners which are per M square feet.

"In January last year the levels attained during the close of 1939 held for the most part, but prices declined gradually until the end of the first quarter, when the bank of unfilled orders reached the low point.

"With the stoppage of European pulp imports and threat of scarcity, board prices advanced and held until August, when a lessened demand resulted in reductions. Since then prices have been somewhat firmer, but throughout the year changes have been slight, with less than $2.50 swing above or below the average.

"The Bureau of Labor Statistics, in the Index of Prices, shows this same trend. The index figure for the first week in January, 1940, stood at 79.5, declined at the close of the first quarter to 77.6, improved again to 79.0, with 77.0 in August and 79.9 at the close of the year. Indications at the present time (February, 1941) point to a slow improvement in the index figures and for paper board it is safe at least to predict that no material decline will be felt this year.

Outlook for 1941

● "The paperboard industry is dependent to a large extent upon general business and the flow of commodities from producer to consumer. Now, for the first time in several years, there is a sustained upward trend in the durable goods industries which gives promise of a new phase in the business cycle. Some economists place the failure of business recovery in the past upon the lack of activity in durable goods production where the high ratio of unemployment has been most marked. Assuming that these contentions are correct, and acknowledging that they are predicated largely upon the defense program, the outlook for 1941 and even for 1942 points to a further advance on the road towards better business. Reductions in unemployment, higher wage rates and better sutainsed operating time mean greater purchasing power which, in turn, means more demand for the many items requiring paperboard boxes. Commodity prices are moving upward, confirming that a better demand is in evidence, and already statistics point towards a larger volume during the present year.

"The effect of the European war upon this country is uncertain, but determination to build up our own defense is assured, with large sums already appropriated. The ever increasing burden of taxes is a heavy drag upon business recovery, but nevertheless the prospects are bright for 1941 and the paperboard industry is well prepared to do its share and maintain its position among the leaders of American Industry."

Paper Industry Eighth In Plant Expenditure

● Capital expenditures in 1939 for plant and equipment of 95,909 factories in the United States accounting for 85.5 per cent of the value of all the nation's manufactured products amounted to $1,337,588,872. The remaining establishments, accounting for 14.5 per cent of the total value of products manufactured, did not report any expenditures for plant and equipment in 1939, according to a report released by the Bureau of Foreign & Domestic Commerce.

These expenditures included new machinery purchases, $855,206,239, or 63.9 per cent of the total; new construction, $390,781,132, or 29.2 per cent of the total; and plant and equipment in a "used" condition and expenditures for land, $78,289,157, or 5.9 per cent of the total.

While national defense needs have since accelerated factory expansion, the 1939 figures are significant, says the Bureau of Foreign & Domestic Commerce, as the first ever assembled on such expenditures in a normal year by American industry.

The biggest outlay for plant and equipment was reported by the food and kindred products industries, with $212,044,663. Second, with $174,923,498, were processors of iron and steel. The chemical industries ranked third with $125,009,766; petroleum and coal products fourth, with $122,835,736; and machinery factories fifth, with $94,810,703.

Sixth, textile and other fiber manufactures, $94,547,341; seventh, automobile and automobile equipment, $76,502,656; eighth, paper and allied products with $67,478,936.

Out of 3,279 plants in the paper and allied products group, 2,216 or 67.6 per cent reported expenditures for plant and equipment. Of the total of $67,478,936 spent for plants and equipment, 25.5 per cent or $17,184,290 was spent for new construction or major alterations of building and other fixed plants and structures; 68.2 per cent or $46,052,997, was spent for new machinery and operating equipment; 4.3 per cent or $2,911,595 was spent for plant and equipment acquired in a "used" condition from other owners and expenditures for land; and 2 per cent or $1,330,054 was spent for unclassified expenditures.

British Paper Exports Up in 1940

● Exports of paper from Great Britain were larger in 1940 than in 1939 or 1938 despite the restrictions of war, according to The World's Paper Trade Review of London.

Paper exports from Great Britain in 1940 were valued at 9,859,160 pounds, increases of 3,163,142 pounds, 32 per cent, and 2,928,847 pounds, 42.2 per cent over 1939 and 1938.

PACIFIC COAST STATES
and British Columbia
Paper and Paperboard Production
(Tons 2,000 lbs.)

State—	1934	1935	1936	1937	1938	1939	1940
Washington	418,115	465,708	506,579	546,227	472,185	557,178‡	585,037
Oregon	220,684	242,085	262,478	273,630	234,879	277,157‡	291,015
California	169,709	221,763	265,662	278,650	242,533	286,189‡	300,498
British Columbia	299,502	299,816	320,555	320,920	222,305	272,117	330,572
Total Coast Production	1,108,010	1,229,372	1,355,274	1,419,427	1,171,902	1,392,936	1,507,122

Bureau of the Census, Dept. of Commerce. British Columbia figures from the Dept. of Lands, Forest Branch.
‡ 1939 Washington, Oregon and California production estimated on basis of national average increase from 1938 production.

Newsprint in 1940

● Most factors in the business picture in the United States in 1940 were affected by war or preparations for war. In 1941 all of them will be so affected. Under these circumstances a review of past happenings and the causes therefor is easily made, but a preview of events to come is almost impossible, stated Royal S. Kellogg, secretary of the News Print Service Bureau, in his annual report which follows.

In total, business activity in the United States reached a new all-time peak during the latter part of 1940 and starting from that high level is going still higher in 1941. A new tonnage record was set last year in the output of steel whose uses are manifold and in war materials, of overwhelming importance. The general index of **Business Week** averaged 15.7 per cent higher in 1940 than in 1939.

A gain of 16 per cent in North American newsprint production last year over 1939 ranks up well with the foregoing. When, however, we find that the increase in newsprint consumption in the United States in 1940 was only 4.6 per cent and that newspaper advertising went up only 2 per cent, it is evident that there can be great activity in important segments of industry and trade without a corresponding rise in the use of paper.

Production

● Continental production of newsprint in 1940 in round numbers was 4,785,000 tons, an increase of 668,000 tons over 1939 and, with the exception of the year 1937, the greatest on record. Since for well-known reasons the abnormal production of 1937 was followed by the subnormal production of 1938, the 1937 figure should not be used alone for the purpose of studying trends. Striking an average for 1937-38 of 4,328,000 tons gives a fairer comparison of 457,000 tons under the 1940 output. It is more correct to regard 1940 as setting the all-time high to date for North American newsprint output. This heavy production was stimulated by an increase of 255,000 tons in overseas exports over 1939 and a decrease of 276,000 tons in imports of European newsprint—both due to the war. It is obvious therefore, that without war effects there would have been no noteworthy cotninental newsprint output last year.

The North American production of 4,785,000 tons of newsprint was supplied to the extent of 3,419,000 tons or 71 per cent by Canada, 1,013,000 tons or 21 per cent by the United States and 353,000 tons or a little more than 7 per cent by Newfoundland. The gain in Canada was 19.2 per cent, that in the United States 7.9 per cent and that in Newfoundland 14.5 per cent, making a combined increase of 16.2 per cent. Canadian production was larger than in any preceding year except 1937, United States output was more than in any year since 1931, while Newfoundland turned out slightly more than in any year previous in the history of the newsprint industry in that colony. Long-time trends in newsprint production are shown in the chart.

On the basis of industry-accepted figures as to capacity, newsprint operations in 1940 were at about 78 per cent in Canada, 93 per cent in the United States and 94 per cent in Newfoundland, or a continental average of 82 per cent. Since North America was called upon to supply newsprint last year more widely and in larger quantities throughout the world than is likely to be the case under any peace-time set-up, it is obvious that there is ample machine capacity on the continent to take care of any foreseeable future demands for newsprint—providing controlled economies permit the procurement of materials, their fabrication and shipment of the product.

Shipments from the mills more than kept pace with production during 1940, so that at the end of the year there was nearly 13 per cent less tonnage in mill stocks than at the end of 1939. While

U. S. Newsprint Industry's Share of Domestic Market Decreased Slightly in 1940

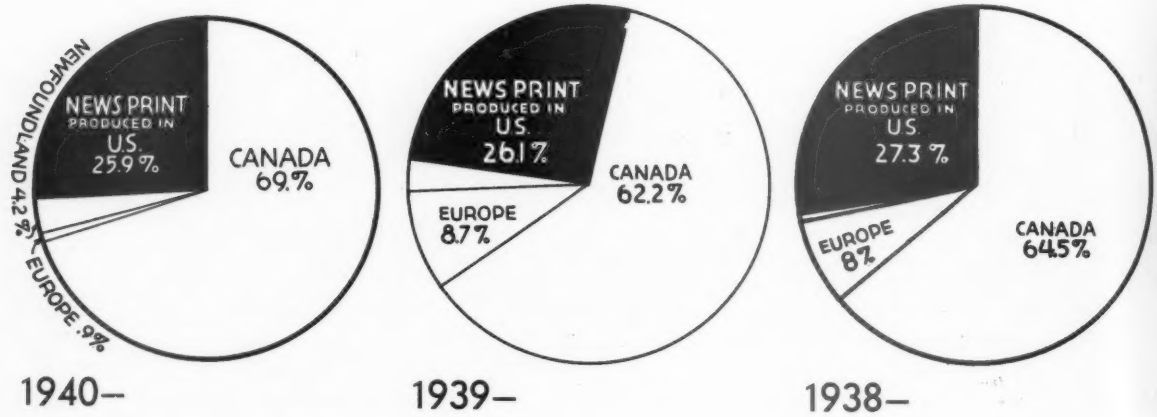
United States newsprint mills supplied 25.9 per cent of the total newsprint available for consumption in the country in 1940 as compared with 26.1 per cent in 1939, a decline of .2 per cent. In 1938 U. S. mills supplied 27.3 per cent and in 1937 but 22 per cent.

Each circle represents the total amount of newsprint in the United States available for consumption in that year, with the percentage of consumption supplied by domestic production and imports.

From 1915 through 1937 the percentage of the domestic market supplied by U. S. newsprint producers declined from 76.3 per cent in 1915 to 22 per cent in 1937. In 1938 the trend was reversed and American producers furnished 27.3 per cent of the country's newsprint consumption despite the fact that domestic production was the lowest in 35 years. The gain was due to the greater percentage reduction in newsprint imports than in domestic production. U. S. newsprint production in 1938 was a little less than half the production in 1926.

U. S. newsprint production in 1940 was 58,741 tons greater than in 1939 and the latter year's production was 134,259 tons larger than the 1938 production. The 1940 production went over a million tons for the first time since 1932. Exports of 44,000 tons in 1940 are said to be misleading as paper other than standard newsprint was included and the News Print Service Bureau estimates that actual standard newsprint exports probably did not exceed 15,000 tons.

Total newsprint available for consumption in the U. S. in 1940 was 3,746,000 short tons against 3,561,859 short tons in 1939.



SOURCES OF NEWSPRINT USED IN THE UNITED STATES

(Tons in Round Numbers)

Source: News Print Service Bureau

	U. S. Production	U. S. Exports	Imports into the U. S. From			Available for Consumption
			Canada	Newfoundland	Europe	
1913	1,305,000	43,000	219,000	----------	1,000	1,482,000
1914	1,313,000	61,000	310,000	----------	5,000	1,567,000
1915	1,239,000	55,000	367,000	----------	1,000	1,552,000
1916	1,315,000	76,000	468,000	----------	----------	1,707,000
1917	1,359,000	94,000	558,000	----------	1,000	1,824,000
1918	1,260,000	97,000	596,000	----------	----------	1,759,000
1919	1,375,000	111,000	628,000	----------	3,000	1,895,000
1920	1,512,000	49,000	679,000	1,000	50,000	2,193,000
1921	1,225,000	17,000	657,000	----------	135,000	2,000,000
1922	1,448,000	26,000	896,000	----------	133,000	2,451,000
1923	1,485,000	16,000	1,109,000	----------	200,000	2,778,000
1924	1,481,000	17,000	1,197,000	4,000	156,000	2,821,000
1925	1,530,000	23,000	1,295,000	20,000	133,000	2,955,000
1926	1,684,000	19,000	1,658,000	94,000	100,000	3,517,000
1927	1,486,000	12,000	1,776,000	89,000	122,000	3,461,000
1928	1,418,000	11,000	1,926,000	114,000	116,000	3,563,000
1929	1,392,000	19,000	2,195,000	132,000	96,000	3,796,000
1930	1,282,000	10,000	1,989,000	156,000	134,000	3,551,000
1931	1,157,000	10,000	1,754,000	160,000	151,000	3,212,000
1932	1,009,000	8,000	1,533,000	114,000	144,000	2,793,000
1933	946,000	11,000	1,545,000	95,000	153,000	2,728,000
1934	961,000	23,000	1,956,000	107,000	147,000	3,148,000
1935	912,000	23,000	2,062,000	124,000	197,000	3,272,000
1936	921,000	15,000	2,422,000	87,000	243,000	3,658,000
1937	946,000	17,000	2,899,000	124,000	294,000	4,246,000
1938	820,000	6,000	1,938,000	94,000	243,000	3,089,000
1939	954,259	13,000	2,206,000	104,600	310,000	3,561,859
1940	1,013,000	44,000*	2,586,000	157,000	34,000	3,746,000

*Includes paper which is not standard newsprint. Standard newsprint exports from the United States during 1940 did not exceed 15,000 tons.

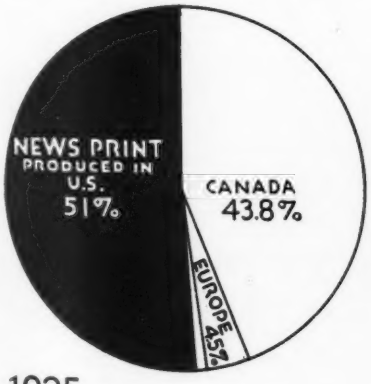
this percentage sounds large, it represents a decrease of only 33,000 tons since mill stocks of newsprint are never large in relation to the annual output.

Exports

● Exports of newsprint from Canada in 1940 amounted to 3,243,000 tons or 95 per cent of production. This was an increase of 584,000 tons or 22 per cent from the 1939 figure of 2,659,000 tons.

Of the 1940 Canadian newsprint exports, 2,586,000 tons or 80 per cent came to the United States and the balance of 657,000 tons went all over the world. The increase in shipments to the United States last year was 380,000 tons or 17 per cent, while the gain in overseas shipments was 204,000 tons or 45 per cent from the 452,000 tons sent overseas in 1939.

A study of the details of Canadian overseas shipments of newsprint in 1940 gives abundant evidence of the effect of the European war. Due to restricted consumption in the United Kingdom, 145,000 tons were shipped there in 1940 compared with 177,000 tons in 1939. Elsewhere, however, it was a different story. Australia and New Zealand took 193,000 tons compared with 154,000 tons the previous year, Argentina 87,000 tons compared with 38,000 tons, Brazil 33,000 compared with 6,000 tons and Mexico 30,000 tons compared with 3,000 tons the preceding year. China received 13,000 tons of Canadian newsprint. British India 25,000 tons and the rest of Asia 12,000 tons, a total of nearly 50,000 tons contrasted with 5,000 tons in 1939, and so around the world Canadian newsprint is being called upon to take the place of much tonnage normally going to these markets from Europe, which because of the war was unable to move.



1925–

1915–

Newfoundland sent 196,000 tons or 56 per cent of its production overseas last year, the balance going to the United States. This was an increase of 19,000 tons in the overseas shipments from that colony in 1939.

Exports of newsprint from the United States amounted to something last year for the first time since 1920, with a reported total of approximately 44,000 tons. The causes therefor of course were the same as for the increase in Canadian shipments. United States newsprint in 1940 went to the extent of 21,000 tons to China and other Asiatic countries, 11,000 tons to the Philippines and 10,000 tons to Cuba, Central and South America. While the total after all was not large in tonnage, it was nearly three and one-half times as great as in 1939.

It should be noted, however, that the United States official figures on newsprint exports include considerable paper which is not standard newsprint. It is probable that standard newsprint exports from the United States did not exceed 15,000 tons.

Imports

● Aside from the imports from Canada and Newfoundland of 2,729,000 tons, newsprint coming into the United States last year was less than the amount exported and amounted to only 34,000 tons. This total was made up of 23,000 tons

from Finland, 9,000 tons from Sweden and not quite 2,000 tons from Norway. Nearly all of the overseas newsprint came during the first four months of 1940. Since that time there have been only occasional partial cargoes along with other goods exported from Finland via Petsamo, since to get to Petsamo from railhead involves some 300 miles of truck-haul over a gravel road.

Production of pulp and paper in Finland, Sweden and Norway has been difficult since the capitulation of Finland to Russia, the invasion of Norway by Germany and the bottling-up of Sweden. Reports from the associations in those countries give a total of 86,000 tons of newsprint produced in Finland during the first eleven months of 1940 compared with 505,000 tons during the corresponding period in 1939, and of 116,000 tons made in Sweden during the first nine months of last year compared with 225,000 tons in the same months of 1939. In November, for example, the total output of the Finnish newsprint mills was only 6,000 tons. Not a scrap of information as to newsprint production has come from Norway since the Nazis entered.

The total of 34,000 tons of European newsprint imported into the United States in 1940 was, of course, very much less than in any year since that large movement started in 1920. It did not get well underway until the final quarter of 1920, but nevertheless 50,000 tons came in that year.

Stocks

● Stocks on hand or in transit to the publishers reported to the American Newspaper Publishers Association were 356,000 tons at the end of December, an increase of 28,000 tons from December 31, 1939. This increase did not equal the decrease of 33,000 tons in the stocks of manufacturers during the same period. In other words, there is no oversupply on either side and only a fair reserve to allow for contingencies which often arise during time of war and preparations for war.

Following the policy urged upon them by the officers of the American Newspaper Publishers Association, the publishers during 1940 made more than a usual endeavor to take their estimated yearly requirements in equal monthly instalments. Thus the stocks which were built up in midsummer were brought down steadily during the period of increased consumption in the fall, and mill shipments went forward at a good rate throughout the year.

Consumption

● The 421 publishers reporting to the American Newspaper Publishers Association used 2,856,000 tons of newsprint paper in 1940, a gain of 126,000 tons or 4.6 per cent over 1939. This checks out very closely with the forecast made early in the year of an increase of approximately 5 per cent based upon replies from 962 publishers. The careful forecast made by the American Newspaper Publishers Association on such a wide basis was most useful to both producers and users of newsprint, and that it should have been so closely approximated is an example of effective statistical work.

Month-by-month comparisons of newsprint consumption last year with the corresponding months in 1939 give some erratic results, not in line with fluctuations in the volume of newspaper advertising. The explanation therefor is evidently changes in sizes and circulations due to varying war interest. The extremes were represented by an increase of 11 per cent in consumption in the month of May—when Germany went into the Lowlands—and none at all in the month of September. The rise of 4.6 per cent for the year is pretty good compared with a newspaper advertising increase of 2 per cent.

On the assumption—which in 1939 seemed to be approximately correct—that the publishers reporting to the American Newspaper Publishers Association used about 77 per cent of the United States newsprint consumption, the grand total in 1940 was around 3,700,000 tons.

56 Pounds Per Capita

A newsprint consumption of 3,700,000 tons in the United States last year was the equivalent of 56 pounds per capita. This was 2 pounds more per capita than in 1939, but less than the per capita consumption in 1929, 1930, 1936 and 1937. As time goes on it is increasingly probable that the per capita consumption of 62 pounds in 1929 was the all-time high, and that the present per capita rate can be regarded as about all that may be expected.

Sizes

● Leading daily newspapers averaged exactly the same size in 1940 as in 1939, i.e., 27 pages. This was one page more than in 1938 but one page under 1937. It was also no larger than in 1923 and 5 less than the 1929 average of 32 pages.

Sunday newspapers made real gains

"NON-USERS ARE THE LOSERS"

50TH ANNIVERSARY

TENAX FELTS

50 YEARS OF SERVICE

Papermaking history was written in 1891 when we introduced TENAX FELTS. Throughout the succeeding fifty years constant research and experimental tests have kept them in the forefront as Leaders in producing perfect papers at low costs per ton.

Let TENAX FELTS point the way to greater 1941 profits in your mill.

"Non-Users Are the Losers"

LOCKPORT FELT COMPANY

NEWFANE, N. Y.

Pacific Coast Representative: ALAN C. DUNHAM, Portland, Ore.

last year with an average of 86 pages compared with 82 in 1939. This made the Sunday issues the largest in any year (except 1937) since the average of 91 pages in 1930. The December average of 90 pages was 7 pages larger than December the preceding year and with the exception of 1936 has not been surpassed for that month since December, 1929.

Outlook

● Some sidelights upon life and activity in the United States are shown by the following estimates for the year 1941:

16 million owners of securities
46 million savings accounts
64 million life insurance policies
29 million automobiles, trucks and buses
14 million owners of homes
20 million telephones

These are some of the lines in which there is a large and permanent opportunity for replacement and extension under anything like normal conditions. Under the controlled economy of war and prospective war, much money and effort which might continue to pour into these fields will be switched elsewhere. For example, it is estimated that the aviation industry has undelivered orders totaling around 4 billion dollars or eight times as much as a year ago. This shows what sudden and tremendous shifts in activity war can bring about, to say nothing of the results on human life.

If—as now seems most probable—the war in Europe goes on throughout 1941, and if as seems equally certain, the United States is drawn closer thereto, certain tendencies will appear and some conditions already existent in 1940 will be continued.

Due to greater restrictions on the consumption of newsprint in the United Kingdom—and perhaps elsewhere in the British Commonwealth—overseas exports of newsprint from Canada and Newfoundland in 1941 are not scheduled to reach the high peak of 1940. On the other hand, the year-long continuance of the war means that not even the 34,000 tons of newsprint which came from Europe to the United States in 1940 will get here in 1941. There will be only insignificant dribbles.

At this time it is not conservative to figure upon any materially larger consumption of newsprint in the United States in 1941 than occurred in 1940. Sustained newspaper circulations are not likely to be much greater than at present. It is doubtful if there will be any improvement in national newspaper advertising. If there is any increase in newspaper advertising in the United States in 1941, it will most probably be for consumer goods. With a high rate of employment and rising wages, retail trade may increase 5 to 10 per cent which should naturally lead to a greater volume of newspaper advertising in this field of distribution.

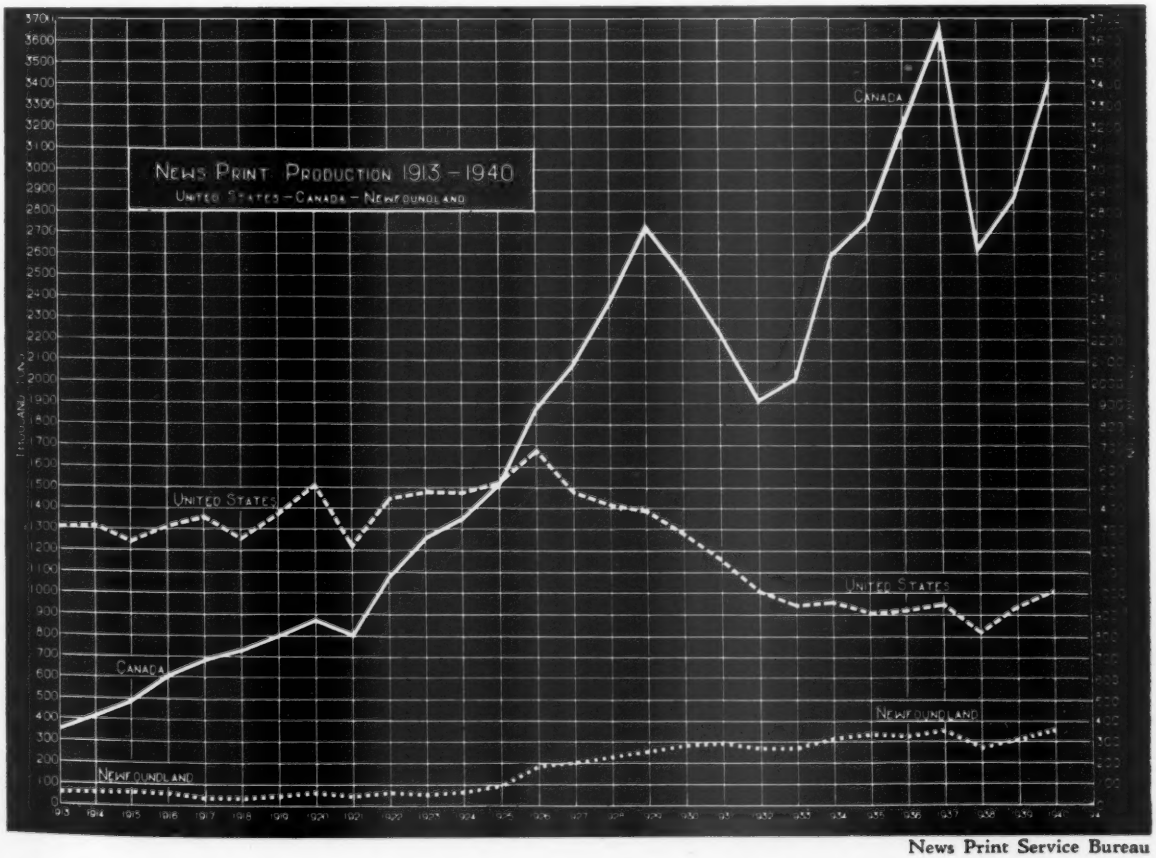
Nothing has yet occurred in North America materially to reduce possibilities of newsprint production. There is no labor trouble, there is no shortage of wood and consumer relations are the best in many years. The price of newsprint continues below the general commodity average. Before 1941 is ended, however, priorities may be established and restrictions imposed for the purpose of concentrating upon war materials which may hamper the production of newsprint paper. So far such obstacles are not serious. One thing does appear certain—that if any considerable amount of money is made by any business enterprise in North America during 1941, a very large part of it will be taken by taxes.

First Four Months Newsprint Production

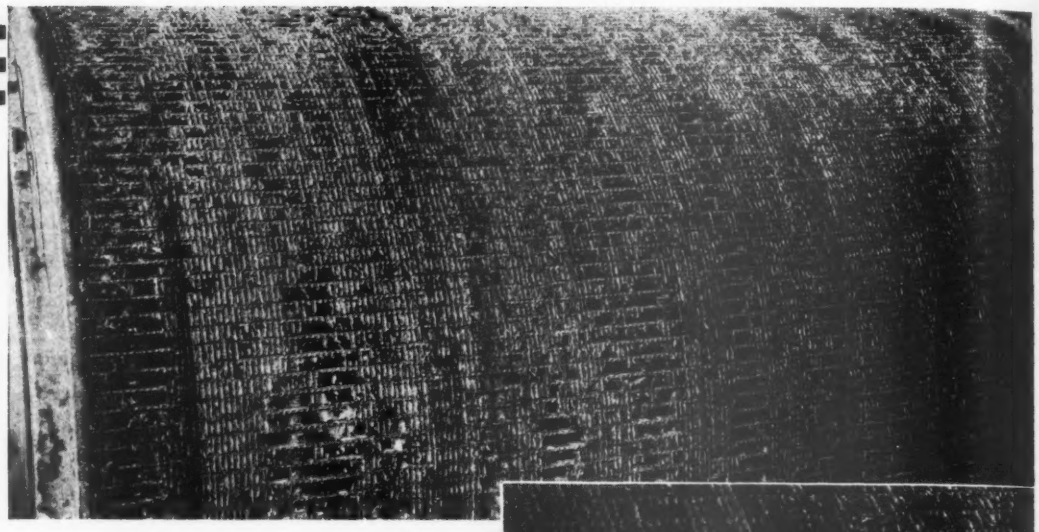
● Production in Canada during April, 1941, amounted to 279,996 tons and shipments to 285,789 tons, according to the News Print Service Bureau. Production in the United States was 87,000 tons and shipments 91,487 tons, making a total United States and Canadian newsprint production of 366,996 tons and shipments of 377,276 tons. During April, 26,605 tons of newsprint were made in Newfoundland, so that the total North American production for the month amounted to 393,601 tons. Total production in April, 1940, was 383,447 tons.

The Canadian mills produced 59,589 tons more in the first four months of 1941 than in the first four months of 1940, which was an increase of five and nine-tenths per cent. The output in the United States was 6,219 tons or one and eight-tenths per cent more than in the first four months of 1940; in Newfoundland production was 7,178 tons or six and six-tenths per cent more, making a total increase of 72,986 tons, or five per cent more than in the first four months of 1940.

Stocks of newsprint paper at the end of April were 180,389 tons at Canadian mills and 14,303 tons at United States mills, making a combined total of 194,692 tons compared with 204,972 tons on March 31, 1941, and 231,230 tons at the end of April, 1940.



News Print Service Bureau



DON'T LET THIS HAPPEN TO YOU

The above photograph isn't pretty, but it tells the story of what can happen to a flat-rodded cylinder mold: stock lodged between the flat surfaces and wedged tightly against the wire. Result: the finished sheet was streaked and imperfect.

Black-Clawson has reduced the possibility of this happening by adopting round rods for their cylinder molds. This simple improvement eliminates clogging and makes for better formation.

Furthermore, less power is required to turn the Black-Clawson mold. In one test, a flat-rodded mold used *five times* the power needed to drive a B-C unit. Add to these advantages a deflection not to exceed .005″ across a 100″ B-C mold and you will agree that round rods are a definite advantage.

Our Pacific Coast representative is Mr. Robert Petrie, 3206 42nd Ave., N. E., Portland, Oregon. Consult him for full details.

—•—

The Black-Clawson Co., Hamilton, Ohio. Shartle Division, Middletown, Ohio. Dilts Division, Fulton, N. Y.

BLACK CLAWSON CYLINDER MOLDS

Foreign Pulp Supplied But 49.8% Of U. S. Market in 1940

American producers sold 50.2%, an increase of 21.6% higher than their 1939 share—Domestic sales of U. S. produced pulp sets new record with 2,225,600 tons—Canada sold 34.5% of all pulp sold in the U. S. in 1940 (Soda pulp excluded).

PULP producers in the United States increased their share of the American market for wood pulp in 1940 by 21.6 per cent, from 28.6 per cent of the total sold in this country in 1939 to 50.2 per cent of the total in 1940 (soda pulp not included). The share of the United States pulp mills of the pulp sold in 1940 to American paper mills, rayon yarn mills, manufacturers of transparent cellulose sheeting and to producers of plastics amounted to 1,225,600 short tons, as compared with 808,339 short tons sold in 1939, 556,153 tons sold in 1938 and 621,717 tons sold in 1937.

Foreign producers of wood pulp supplied the United States market with 1,213,869 short tons or 49.8 per cent of the total bought in 1940, as compared with 2,017,345 short tons or 71.4 per cent in 1939, 1,701,108 short tons or 75.3 per cent in 1938 and 2,384,212 short tons or 79.32 per cent in 1937.

32.2% Gain Since 1934

● United States producers of wood pulp for sale in the domestic market have increased their share of their own home market by 32.2 per cent since 1934 when they sold but 388,456 tons of the total of 2,187,120 tons sold, and the foreign producers supplied 82 per cent or 1,978,664 tons.

In 1935 United States pulp mills sold 443,811 short tons or 18 per cent of the total of 2,377,442 tons, the same percentage as in 1934. There was, however, a fractional gain as the percentage was actually 18.22 per cent. Foreign producers in 1935 supplied 81.87 per cent or 1,933,631 tons of the total sold in this country.

The next year, 1936, United States producers were able to make another small gain, selling 530,173 short tons or 18.72 per cent of the total of 2,795,265 short tons sold during the year. Foreign producers sold 81.28 per cent of the total or 2,265,092 tons.

In 1937 the share of the American pulp mills rose to 20.68 per cent or 621,717 short tons out of a total of 3,005,929 short tons sold. This was a percentage gain of 1.96 per cent over the 1936 percentage of 18.72. Foreign producers in 1937 held 79.32 per cent of the market with sales of 2,384,212 short tons.

The year 1938 saw the share of American producers increase nearly 4 per cent over 1937 with 20.66 per cent or 556,153 short tons out of a total of 2,257,261 short tons bought by American purchasers. Foreign pulp producers' share dropped to 75.34 per cent of the total or 1,701,108 short tons.

In 1939 the American's share increased again, this time by 3.94 per cent over 1938 with 28.6 per cent or 808,339 tons of a total of 2,825,684 tons bought by American mills. The foreign pulp producers' share declined to 71.4 per cent of the total or 2,017,735 tons.

U. S. Sales Set Record

● The 1,225,600 short tons sold to American buyers by United States pulp mills in 1940 set a new record. The gain over 1939's 808,339 short tons sold was 417,261 short tons or 51.6 per cent.

The increase in 1940 sales by Domestic producers was 120 per cent or 669,447 tons larger than the 1938 sales of 556,153 tons. When compared with 1937 the gain in domestic sales turns out to have been 97 per cent or 603,883 tons higher than the sales in that year of 621,717 tons.

In the six years since 1934 sales of wood pulp by United States producers to domestic buyers have risen 837,144 short tons or 215 per cent above the 388,456 tons sold in that year.

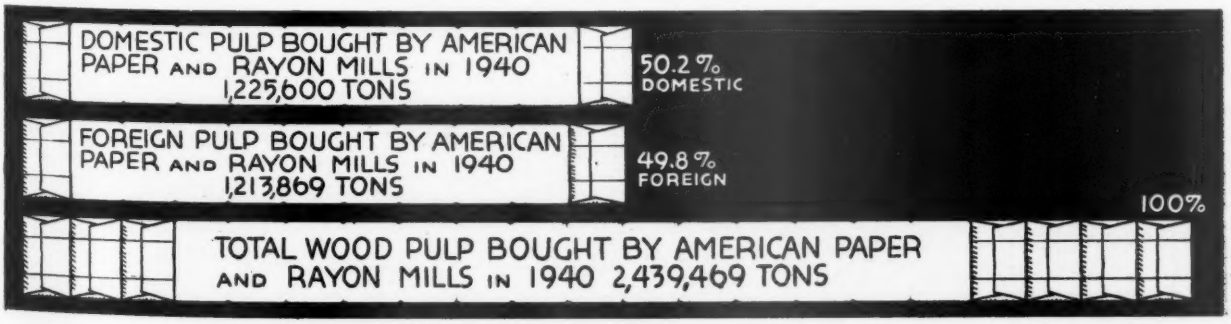
Of the 1,366,879 short tons of all grades of wood pulp (including soda and off-quality pulps) produced for domestic sale in 1940, 1,005,415 tons or 7.3 per cent were sulphites. In 1939 the percentage of sulphites sold was 70.2 per cent. Bleached sulphite pulps totaling 635,264 tons accounted for 46.5 per cent of all pulp sold in 1940 while in 1939 they accounted for 47.6 per cent.

The rayon grades of bleached sulphite sold in this country last year amounted to 12 per cent, 166,176 tons, of all pulp sold and for 26 per cent of the 635,264 tons of bleached sulphite pulps sold. Paper grades of bleached sulphite accounted for 74 per cent or 469,088 tons in 1940.

In 1939 the rayon grades of bleached sulphite took 11.9 per cent of the total with 106,760 tons out of total sales of 808,339 tons, and 25 per cent of the bleached sulphite total of 426,447 tons.

Unbleached sulphite pulp sold last year accounted for 27 per cent of all pulp sold with 370,151 tons. In 1939 unbleached sulphite in the

In 1940—
American Mills Bought 2,439,469 Tons of Wood Pulp. Of This Total FOREIGN Pulp Mills Supplied 1,213,869 Tons. Of This Total AMERICAN Pulp Mills Supplied 1,225,600 Tons.
(Soda Pulp not included)


DOMESTIC PULP BOUGHT BY AMERICAN PAPER AND RAYON MILLS IN 1940 1,225,600 TONS
50.2% DOMESTIC
FOREIGN PULP BOUGHT BY AMERICAN PAPER AND RAYON MILLS IN 1940 1,213,869 TONS
49.8% FOREIGN
100%
TOTAL WOOD PULP BOUGHT BY AMERICAN PAPER AND RAYON MILLS IN 1940 2,439,469 TONS

amount of 202,438 tons accounted for 22.6 per cent of total sales.

Bleached sulphate pulp sales of 75,658 tons in 1940 accounted for 5.5 per cent of the total pulp sold as compared with 8.2 per cent in 1939 with 73,408 tons. Unbleached sulphate sales of 143,527 tons were 10.5 per cent of the total sold in 1940 as against 6.9 per cent in 1939 with 61,955 tons.

Soda pulp sales last year of 97,400 tons were 7.1 per cent of all pulp sold while in 1939 soda sales of 86,591 tons acounted for 9.6 per cent of the total. Groundwood sales last year of 40,800 tons were 2.9 per cent of the total against 29,798 tons or 3.3 per cent of the 1939 total.

Increases by Grades

● The sulphite pulps with total sales of 1,005,415 tons in 1940 showed an increase of 319,641 tons or 46.6 per cent over the 685,774 tons sold in the domestic market in 1939. (That proportion of pulp production for sale that would normally be shipped to domestic buyers is included in the totals as domestic sales.) The 1940 increase of sulphite sales was 122 per cent or 607,872 tons over 1938.

Bleached sulphite sales of 635,264 tons showed an increase of 107,968 tons, 36.7 per cent, over the 464,296 tons sold in 1939. Rayon grades of bleached sulphite sold last year in the amount of 166,176 tons, a gain of 59,416 tons or 55.6 per cent more than the 106,760 tons sold in 1939.

Paper grades of bleached sulphite with 469,088 tons in 1940 showed an increase of 149,401 tons or 46 per cent over the 319,687 tons sold in the domestic market in 1939.

Sales of unbleached sulphite pulp, 370,151 tons, 151,139 tons or 69 per cent greater that the 219,012 tons sold in 1939.

Bleached sulphate sales of 75,658 tons showed a decline of 2,128 tons or 2.7 per cent below the 1939 domestic sales of 77,786 tons (stocks on hand for domestic sale at the end of year are included).

Unbleached sulphate sales jumped to 143,527 tons in 1940 from 65,793 tons in 1939, a gain of 118 per cent.

Soda pulp sales last year aggregated 97,400 tons, 10,809 tons larger or 12.5 per cent more than the 86,591 tons sold in 1939. Groundwood pulp sales in 1940 amounted to 40,800 tons, a gain of 35 per cent or 10,606 tons over 1939 sales of 30,194 tons.

Last year was the third year the U. S. Customs segregated the imports of rayon grades or bleached sulphite pulp in reporting the imports. The United States Pulp Producers Association made the third segregation. The rayon grade figures given above have not been deducted in figuring the United States and foreign percentages, although the rayon grades are not sold to paper mills. To deduct them would prevent an accurate comparison of the foreign and domestic producers' shares of the American market for pulp with percentages for previous years when this segregation was not made either in imports or in domestic production data.

Had the 166,176 tons of rayon grades been deducted from domestic sales and the 113,945 tons subtracted from foreign sales the share of the total remaining paper pulp market in 1940 going to domestic pulp producers would have been 1,059,424 tons or 49 per cent of the total of 2,159,348 tons of paper pulp sold in the United States last year. The foreign share would have been 1,099,924 tons or 51 per cent.

On the same basis the American producers' share of the paper pulp total in 1939 of 2,630,872 tons would have been 701,579 tons or 26.66 per cent, and the foreign producers' share would have been 1,929,293 tons or 73.34 per cent.

Again, figuring on a strictly paper pulp basis, the United States pulp mills would have shown an increase in 1940 over 1939 of 357,845 tons or 50.2 per cent in the tonnage sold. The decrease in the sales of paper pulp by foreign producers in 1940 under 1939 would have been 829,369 tons or 42 per cent.

Soda pulp is not included in these comparisons as data on domestic sales of this grade were not available for publication prior to 1937, and to include them in subsequent years would have made the comparisons incorrect.

Canada Leading Foreign Supplier

● Last year Canada was the leading supplier of foreign pulp to American paper mills with 817,543 short tons (soda pulp not included) as compared with 629,001 short tons in 1939. Canada shipped 188,542 tons or 29 per cent more in 1940 than in 1939.

The Scandinavian producers, Sweden Norway and Finland, shipped 389,625 short tons of pulp to American buyers in 1940 against 1,305,245 tons in 1939, a decrease of 915,620 tons or 70 per cent.

In 1939 the three Scandinavian countries supplied 46 per cent of all the pulp sold in the United States (soda excluded). In 1940 they sold 16 per cent of the total.

PROPORTION OF UNITED STATES MARKET FOR PULP SUPPLIED BY AMERICAN PULP MILLS AND FOREIGN PULP MILLS*—1938-1939-1940

Tons—2,000 Lbs.

TOTALS By Grades.	1938		1939		1940	
	Pulp Produced By U. S. Mills for Sale in Domestic Market—1938	Pulp Imported Into the United States 1938	Pulp Produced By U. S. Mills for Sale in Domestic Market—1939	Pulp Imported Into the United States 1939	Pulp Produced By U. S. Mills for Sale in Domestic Market—1940	Pulp Imported Into the United States 1940
Total—All Grades	692,142	1,710,513	963,162	2,026,297	1,366,879	1,224,632
Total—Sulphite	497,543	1,025,981	685,774	1,135,302	1,005,415	733,829
Bleached Sulphite	358,354	337,659	464,296	474,109	635,264	352,916
Rayon	102,424	65,219	106,760	88,052	166,176	113,945
Other	259,960	272,440	319,687	386,057	469,088	238,971
Unbleached Sulphite	140,189	688,322	219,012	661,193	370,151	380,913
Total—Sulphate	75,167	516,262	143,614	654,419	219,185	308,464
Bleached Sulphate	47,025	90,173	77,786	108,252	75,658	84,887
Unbleached Sulphate	28,013	426,082	65,793	546,167	143,527	223,577
Total Groundwood	30,203	158,865	30,194	227,432	40,800	171,513
Soda	72,990	9,405	86,591	8,952	97,400	10,763
Total—Miscellaneous, Damaged and Off-Quality	15,472	———	16,189	192	27,815	63

*Table prepared by Pacific Pulp & Paper Industry from United States Pulp Producers Association data on wood pulp production, shipments and stocks; and from import data supplied by the Bureau of Foreign and Domestic Commerce, U. S. Department of Commerce.
"Pulp Produced By U. S. Mills for Sale in Domestic Market" includes that part of the stocks on hand at the end of the year intended for future shipment to domestic buyers.

of PROVEN MERIT . . . . . *and* ESTABLISHED VALUE

HELLER & MERZ
DYESTUFFS

NORTON
PULPSTONES

HUYCK
FELTS
JACKETS

CAMERON
SLITTERS
REWINDERS

PLANK
DANDY ROLLS

CALCOT
DRYER CANVAS

EASTWOOD
WIRES

ROBERTS
BURRS

TEXAS GULF
SULPHUR

UNION
SCREEN PLATES

JONES
BEATERS
JORDANS

BEMIS
SPLICING
TISSUE

FARREL-BIRMINGHAM
CALENDER ROLLS
ROLL GRINDERS

CONTROL EQUIPMENT
CONSISTENCY
CONTROLLERS

-EQUIPMENT-
RAW MATERIALS
For Pulp and Paper Mills
MACHINE CLOTHING
-SUPPLIES-

PACIFIC COAST REPRESENTATIVES

Pacific Coast Supply Company
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Pulp Imports Declined; Paper Imports Rose in 1940

Wood Pulp Imports 39.5% below 1939 in tonnage—48.8% below imports in peak year of 1937—Paper Imports Increased 5% in value and were largest by value since 1930—Newsprint and cigarette papers accounted for 96% of value of paper imports in 1940.

THE imports of wood pulp into the United States in 1940 declined from the 1939 figures due to the European war closing off shipments from the Baltic, while imports of paper rose over 1939.

Wood pulp imports, all grades, totaled 1,224,632 short tons, valued at $60,205,978 as compared with 1939 imports of 2,026,297 tons valued at $75,914,237. In tonnage the decline was 39.5 per cent or 801,663 tons, while in value it was $15,708,259 or 20.6 per cent. When compared with the record pulp imports of 1937 when the total was 2,394,765 tons valued at $98,298,022, the 1940 imports were 1,170,196 tons lower, a decline of 48.8 per cent. In value the drop from 1937 was $38,104,356 or 38.7 per cent. In tonnage the 1940 imports were a little more than half of the imports in 1937.

The 1940 imports of pulp, all grades, were lower than the 1,259,642 tons valued at $63,307,373 in 1922, and lower than in any of the intervening years.

Imports of the chemical grades of wood pulp last year totaled 1,053,119 short tons valued at $54,886,406. This was 745,746 tons or 41.5 per cent lower than the 1,798,865 tons of the chemical pulps imported in 1939. In value the 1940 chemical pulps with $54,886,406 were $15,822,786 or 22.3 per cent below the value of the 1939 chemical pulp importations which were worth $70,709,192.

Imports of paper in 1940, on the other hand, increased over 1939 with a value of $132,618,140 as compared with a value of $126,793,442 in 1939, 5 per cent more than the latter year and the largest by value since 1930. On the basis of tonnage imported (which excludes those items not imported on a poundage basis) the 1940 tonnage of 2,811,832 tons exceeded the 1939 tonnage of 2,682,759 tons by 129,093 tons or 4.8 per cent.

Newsprint and cigarette paper accounted for 96 per cent of the value of all paper imports in 1940. In recent years, comments the Bureau of Foreign & Domestic Commerce, our paper imports have averaged over $100,000,000 in value per year, or more than 15 per cent of the quantity of our annual paper consumption. No serious difficulties have developed, however, since over 95 per cent of the volume has consisted of newsprint paper, of which, in recent years, not less than 88 per cent have originated in Canada. The comparatively small imports of newsprint from Finland have stopped but domestic and Canadaian mills have been adequately prepared to take up the slack.

Aside from newsprint, cigarette paper has been the only other paper item of importance imported into the United States in recent years. For some years this country has been dependent in large measure upon France for its cigarette paper requirements. Beginning with the early summer months of 1940 importations of this commodity from France practically ceased. Although reports show imports credited to France in the latter part of the year, it is believed that these were stocks held in bonded warehouse or while credited to France actually were shipped from another country and were not actually shipped from France during the latter part of 1940. The potential shortage of cigarette paper largely has been relieved by the output of a new mill in North Carolina which began operations about the time war was declared in Europe. Early in 1940 it was announced that the capacity of this mill would be doubled. It appears that this mill, together with several mills existing in the United States prior to the war will be able to supply the entire American demand.

Although imports of most other classes of paper declined during 1940 no problem in connection with the supply of such grades has arisen. In all cases, except for small quantities of hand-made and specialty papers, domestic paper producers have been able to duplicate imported papers, and in cases of those small specialty items the loss has not been irreplacable.

Bleached Sulphite Down 25.5%

● Imports of bleached sulphite pulp into this country last year amounted to 352,916 short tons valued at $23,231,971, a decline of 121,193 tons or 25.5 per cent in volume and $1,030,473 or 4.2 per cent.

Last year was the third year in which the rayon and paper grades of bleached sulphite were segregated

99.4% of 1940 U. S. Pulp Imports From Four Countries.

97% of 1939 U. S. Pulp Imports From Five Countries.

96% of 1938 U. S. Pulp Imports From Five Countries.

by the U. S. Customs. Imports of rayon grades of bleached sulphite in 1940 totaled 113,945 short tons valued at $8,939,199 (all from Canada), as compared with 88,052 tons valued at $6,588,321 in 1939. The increase in 1940 was 25,893 tons and in value $2,350,878.

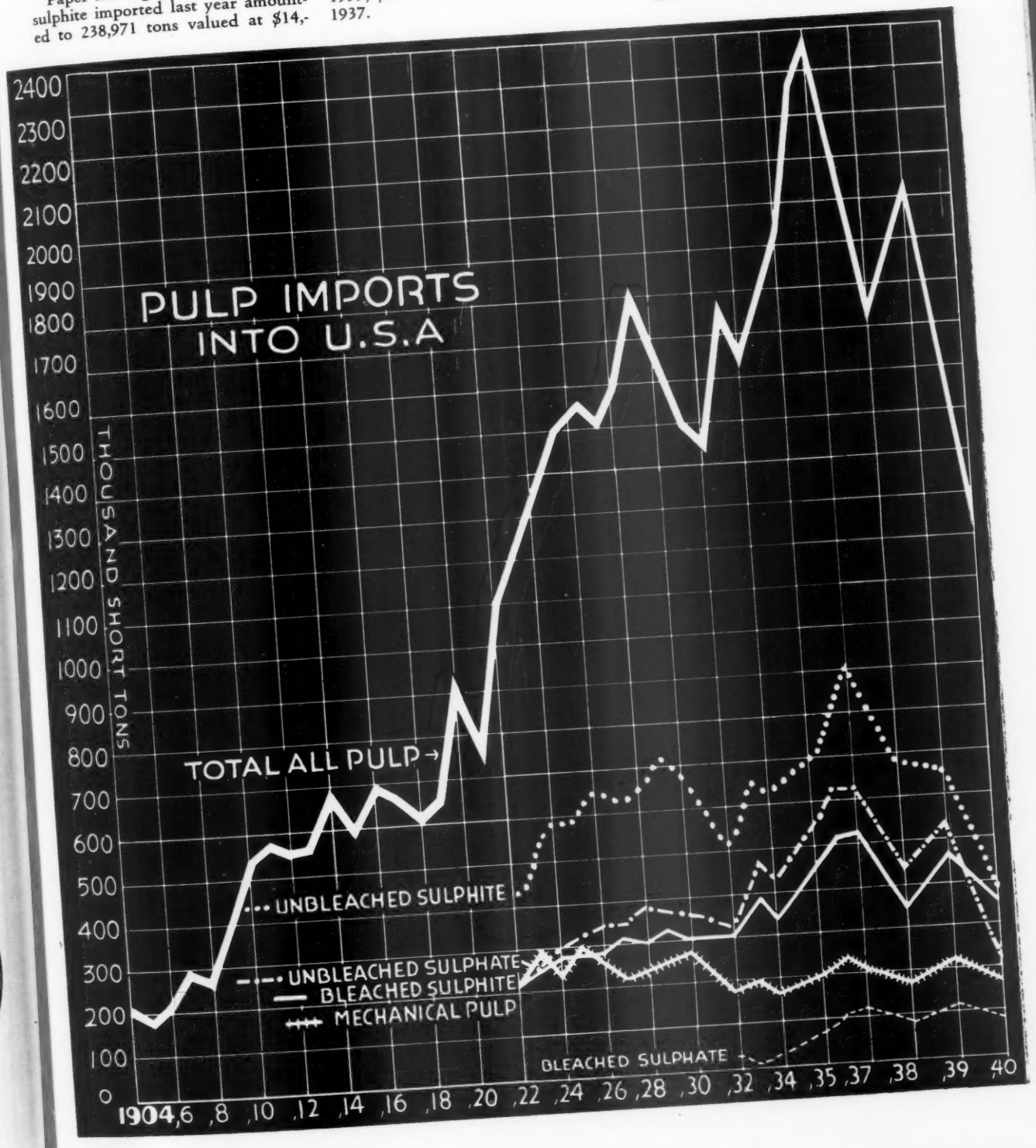
Paper making grades of bleached sulphite imported last year amounted to 238,971 tons valued at $14,292,772 as compared with 386,057 tons worth $17,674,123 in 1939. The drop was 147,086 tons or 38 per cent and in value $3,381,351 or 19 per cent.

Last year's imports of bleached sulphite pulp showed an average declared value of $65,82 (for both grades), as compared with $51.17 in 1939, $59.53 in 1938 and $57.51 in 1937.

Unbleached Sulphite Down 42%

● Imports of unbleached sulphite pulps showed a decline in 1940 for the second successive year. The 1940 total imports of 380,913 short tons was 280,280 tons or 42 per cent below the 1939 imports of 661,193 tons. In value the decline was from $23,395,772 to $16,755,489 in 1940, $6,640,283 or 28 per cent.

The 1939 unbleached sulphite



UNITED STATES

Wood Pulp Imports by Grades and Countries of Origin—1940
(Short Tons)

Grade	Canada		Finland		Norway		Sweden		Others		Total	
	Tons	Value	Tons	Value	Tons	Value	Tons	Value	Tons	Value	Tons	Value
Mechanical Wood Pulp												
Unbleached	161,757	$ 4,527,565	1,226	$ 27,341	.....	.....	8,530	$ 164,666	.....	.....	171,513	$ 4,719,572
Bleached	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Total	161,757	$ 4,527,565	1,226	$ 27,341	.....	.....	8,530	$ 164,666	.....	.....	171,513	$ 4,719,572
Sulphite												
Unbleached	219,016	$10,556,172	33,184	$ 1,389,876	1,646	$ 61,867	122,243	$4,584,509	4,824	$ 163,065	*380,913	$16,755,489
Bleached												
Rayon	113,945	8,939,199	.....	.....	.....	.....	.....	.....	.....	.....	113,945	8,939,199
Other	195,481	12,097,497	13,256	686,740	10,822	591,033	17,535	851,657	1,877	65,845	238,971	14,292,772
Total	528,442	31,592,868	46,440	$ 2,076,616	12,468	$ 652,900	139,778	$ 5,436,166	6,701	$ 228,910	733,829	$39,387,460
Sulphate												
Unbleached	68,882	4,007,341	43,184	$ 1,640,815	4,722	$ 153,019	106,789	$ 3,294,566	.....	.....	223,577	$ 9,095,741
Bleached	58,462	4,373,760	2,500	152,284	.....	.....	23,925	1,265,325	.....	.....	84,887	5,791,369
Total	127,344	8,381,101	45,684	$ 1,793,099	4,722	$ 153,019	130,714	$ 4,559,891	.....	.....	308,464	$14,887,110
Soda	9,433	534,761	.....	.....	.....	.....	1,330	$ 64,763	.....	.....	10,763	599,524
Other Grades	.....	.....	.....	.....	.....	.....	63	12,312	.....	.....	63	12,312
Total	826,976	$45,036,295	93,350	$ 3,897,056	17,190	$ 805,919	280,415	$10,237,798	6,701	228,910	1,224,632	$60,205,978

Source: U. S. Department of Commerce, Bureau of Foreign & Domestic Commerce.
*Includes 5,913 tons of sulphite screenings valued at $83,923.

pulp imports of 661,193 tons were 27,129 tons or 3.9 per cent lower than the 1938 imports of 688,322 tons. In value the 1939 imports at $23,395,772 were $3,487,677 or 12.9 per cent below the 1938 value of $26,883,449.

Compared with the 1937 imports of unbleached sulphite the drop in 1940 was even greater. The 1940 unbleached imports were 538,776 tons or 58.5 per cent below the 1937 total of 919,689 tons. In value the decline was $17,907,564 or 51.7 per cent below the 1937 value of $34,663,053.

The average value of the unbleached sulphite pulp imported in 1940 was $44.60 per ton against $35.38 in 1939, $39.06 in 1938, and $37.60 in 1937.

Unbleached Kraft Declines 59%

● The 1940 imports of unbleached sulphate pulp amounting to 223,577 short tons was 322,590 tons or 59 per cent below the 546,167 tons imported in 1939. In value the 1940 imports with $9,095,741 were $7,873,597 or 46.4 per cent below the 1939 value of $16,969,338.

The average declared value of unbleached sulphate imports in 1940 was $40.68 per ton as compared with $31.19 in 1939, $38.12 in 1938 and $35.78 in 1937.

Bleached Kraft Imports Drop 21.5%

● Imports of bleached sulphate pulp in 1940 declined in tonnage but increased in value. Last year's imports amounted to 84,887 short tons, valued at $5,791,369 as compared with 1939 imports of 108,252 tons valued at $5,644,342. The decline in tonnage was 23,365 or 21.5 per cent and the increase in value was $147,027 or 2.7 per cent.

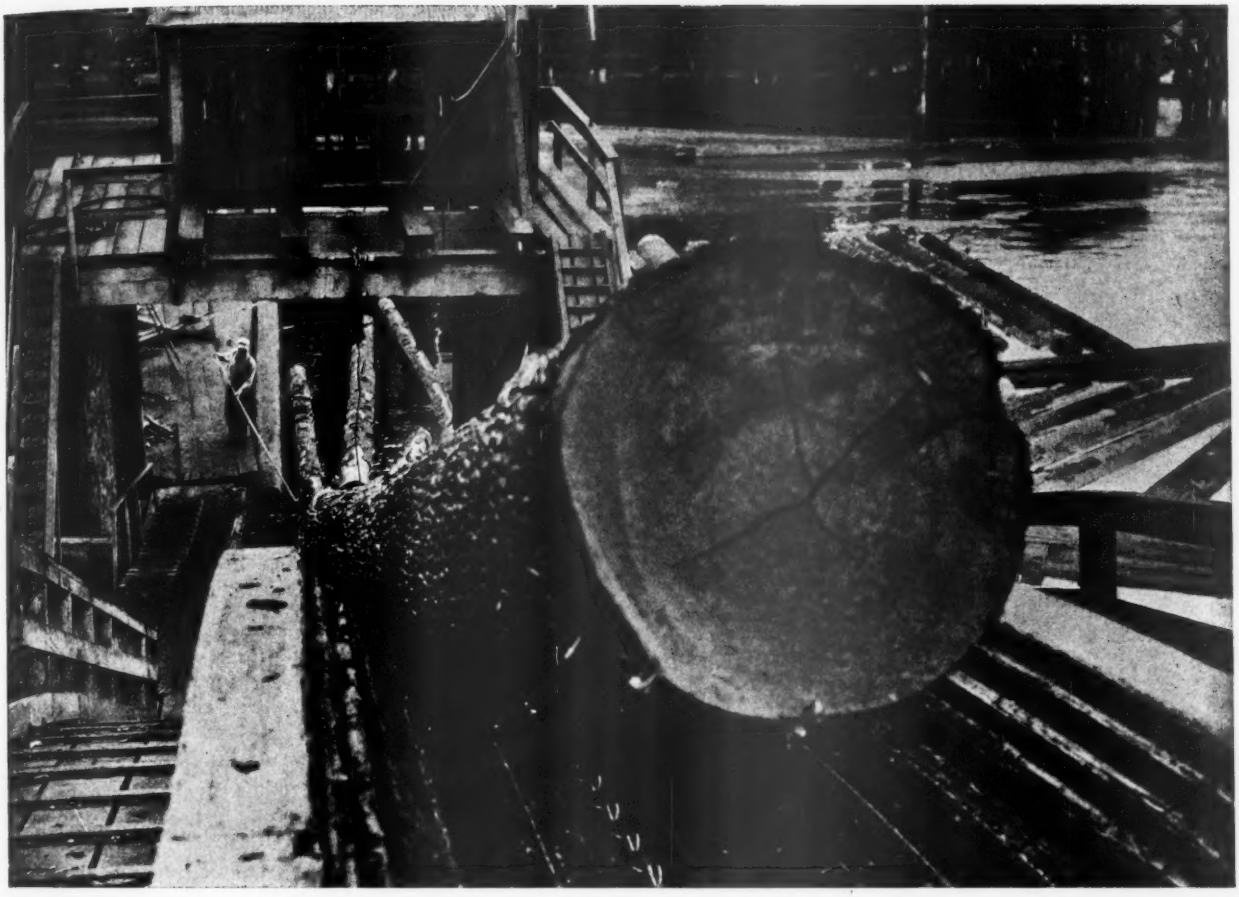
The average value of 1940 imports was $68.22 per ton as compared with $52.13 in 1939, $60.58 in 1938 and $62.70 in 1937.

Groundwood Imports Decline 24.6%

● Last year's imports of groundwood pulp of 171,513 short tons valued at $4,719,572 were 55,919 or 24.6 per cent lower than the 227,432 tons imported in 1939. In value the 1940 imports were $485,473 or 9.3 per cent below the 1939 value of $5,205,045.

Soda Imports Up 20%

● Soda was the only grade of wood pulp to show an increase in imports in 1940 over 1939 with 10,763 short tons valued at $599,524 against 8,952 tons valued at $408,426 in 1939. The increase in tonnage last year over 1939 was 1,811 or 20.2 per cent and in value $191,098 or 46.7 per cent.



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UNITED STATES

Wood Pulp Imports by Grades and Countries of Origin—1939
Short Tons

Grade	Canada		Finland		Germany		Norway		Sweden		Others		Total	
	Tons	Value	Tons	Value	Tons	Value	Tons	Value	Tons	Value	Tons	Value	Tons	Value
Mechanical Wood Pulp														
Unbleached	162,188	$ 3,935,193	19,476	$ 357,452	.....	.....	118	$ 4,054	44,978	$ 891,546	.....	.....	226,760	$ 5,188,245
Bleached	.....	.....	672	16,800	.....	.....	.....	.....	.....	.....	.....	.....	672	16,800
Total	162,188	$ 3,935,193	20,148	$ 374,252	.....	.....	118	$ 4,054	44,978	$ 891,546	.....	.....	227,432	$ 5,205,045
Sulphite														
Unbleached	110,144	$ 4,009,349	115,844	$ 4,075,264	12,440	$428,284	14,145	$ 494,500	374,003	$13,240,211	34,617	$ 1,148,164	661,193	$23,395,772
Bleached														
Rayon	88,052	6,588,321	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	88,052	6,588,321
Other	164,362	7,959,670	70,611	3,184,588	8,702	360,586	65,516	2,934,381	64,855	2,769,571	12,011	465,327	386,057	17,674,123
Total	362,558	$18,557,340	186,455	$ 7,259,852	21,142	$788,870	79,661	$ 3,428,881	438,858	$16,009,782	46,629	$ 1,613,491	1,135,302	$47,658,216
Sulphate														
Unbleached	58,116	$ 2,838,474	121,819	$ 3,476,437	.....	.....	15,545	$ 477,808	335,550	$ 9,694,412	15,137	$ 482,207	546,167	$16,969,338
Bleached	46,139	2,716,203	8,196	372,860	.....	.....	280	11,485	53,637	2,543,794	.....	.....	108,252	5,644,342
Total	104,255	$ 5,554,677	130,015	$ 3,849,297	.....	.....	15,825	$ 489,293	389,187	$12,238,206	15,157	$ 482,207	654,419	$22,613,680
Soda	8,952	$ 408,426	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	8,952	$ 408,426
Other Grades	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	192	28,870	192	28,870
Total	637,953	$28,455,636	336,618	$11,483,401	21,142	$788,870	95,604	$ 3,922,228	873,023	$29,139,534	61,957	$ 2,124,568	2,026,297	$75,914,237

Source: U. S. Department of Commerce, Bureau of Foreign and Domestic Commerce.

U. S. WOOD PULP IMPORTS

Quantity and Value
1922-1940

	Total Bleached Sulphite		Bleached Sulphite Rayon and Special Chemical Grades*		Unbleached Sulphite		Unbleached Sulphate		Bleached Sulphate	
	Long Tons	Value	Long Tons	Value	Long Tons	Value	Long Tons	Value	Long Tons	Value
1940	314,150	$23,231,971	102,412	$8,939,199	340,155	$16,755,489	199,654	$ 9,095,741	75,795	$5,791,369
1939	423,379	24,262,444	78,630	6,588,321	590,445	23,395,772	487,727	16,969,338	96,669	5,644,342
1937	465,372	29,443,254	.....	.....	835,929	34,663,053	565,718	22,269,976	101,682	7,014,450
1936	465,607	25,824,769	.....	.....	715,128	26,778,644	568,827	19,771,988	93,059	5,844,031
1935	383,475	21,934,054	.....	.....	618,872	24,026,340	470,329	15,893,593	75,600	5,193,789
1934	355,484	19,415,304	.....	.....	603,117	21,791,584	429,853	13,733,776	48,275	3,334,713
1933	400,633	19,138,468	.....	.....	643,003	19,946,124	461,890	12,568,367	36,622	2,361,882
1932	311,046	14,727,214	.....	.....	508,088	17,047,669	310,659	9,818,674	23,366	1,975,720
1931	319,518	18,887,719	.....	.....	540,478	23,033,069	344,612	12,035,030	29,683	2,267,090
1930	322,886	22,721,929	.....	.....	665,049	33,193,598	357,551	16,452,381	19,533	1,468,599
1929	334,235	25,338,603	.....	.....	701,456	35,328,982	384,005	20,518,676	15,364	1,139,820
1938	307,771	23,268,421	.....	.....	640,660	32,587,134	381,256	21,170,948	14,590	894,587
1927	311,130	24,224,626	.....	.....	613,856	23,262,845	341,162	20,684,298	10,789	708,712
1926	294,818	23,677,929	.....	.....	628,923	37,032,470	334,803	21,193,459	16,147	1,048,662
1925	286,976	22,527,879	.....	.....	579,284	31,542,079	306,073	18,257,446	17,419	989,933
1924	272,370	21,006,429	.....	.....	562,020	30,092,530	277,994	15,904,350	27,613	1,549,629
1923	250,580	22,245,868	.....	.....	461,853	26,548,431	233,696	15,228,747	15,422	1,080,961
1922	213,093	17,996,401	.....	.....	422,700	22,297,283	275,504	16,085,121	19,440	1,169,570

	Total, All Chemical Pulp		Mechanical Pulp		Total, All Grades Wood Pulp	
	Long Tons	Value	Long Tons	Value	Long Tons	Value
1940	940,435	$55,486,406	153,161	$4,719,572	1,093,596	$60,205,978
1939	1,606,214	70,608,322	203,096	5,205,045	1,809,483	75,914,237
1938	1,410,449	69,177,299	144,408	3,600,509	1,554,857	72,777,808
1937	1,968,701	93,390,733	198,545	4,342,168	2,167,246	97,732,901
1936	1,842,621	78,839,776	207,050	4,051,224	2,070,547	82,891,000
1935	1,557,026	67,403,602	169,707	3,277,385	1,726,732	70,680,987
1934	1,443,351	58,605,219	169,084	3,245,050	1,612,615	61,850,269
1933	1,545,994	54,184,091	187,750	3,214,919	1,733,744	57,399,010
1932	1,154,907	43,652,916	168,272	3,268,457	1,323,179	46,921,373
1931	1,237,600	56,409,638	188,086	4,498,022	1,425,686	60,907,660
1930	1,369,327	74,140,504	267,193	7,146,290	1,636,520	81,286,794
1929	1,441,110	82,840,220	244,162	6,245,776	1,785,272	89,085,996
1928	1,351,005	78,476,280	222,499	5,443,495	1,573,504	83,919,775
1927	1,280,285	80,124,449	219,285	5,961,821	1,499,570	86,086,270
1926	1,278,548	83,208,851	271,213	8,278,220	1,549,761	91,487,071
1925	1,191,875	73,469,063	295,618	8,517,116	1,487,493	81,986,179
1924	1,142,123	68,678,210	219,571	7,190,129	1,361,694	75,868,339
1923	967,869	65,495,800	267,527	9,280,863	1,235,396	74,776,663
1922	931,992	57,600,844	192,688	5,706,529	1,124,680	63,307,373

Source: U. S. Department of Commerce, Bureau of Foreign & Domestic Commerce.

99.4% From Four Countries • Of the 1940 imports 99.4 per cent came from four countries, Canada, Sweden, Finland and Norway. Canada supplied 67.5 per cent or 826,976 short tons; Sweden 22.9 per cent or 280,415 short tons; Finland 7.6 per cent or 93,350 short tons; and, Norway 1.4 per cent or 17,190 short tons.

In 1939, 97 per cent of the imports came from five countries as will be noted from the divided circle.

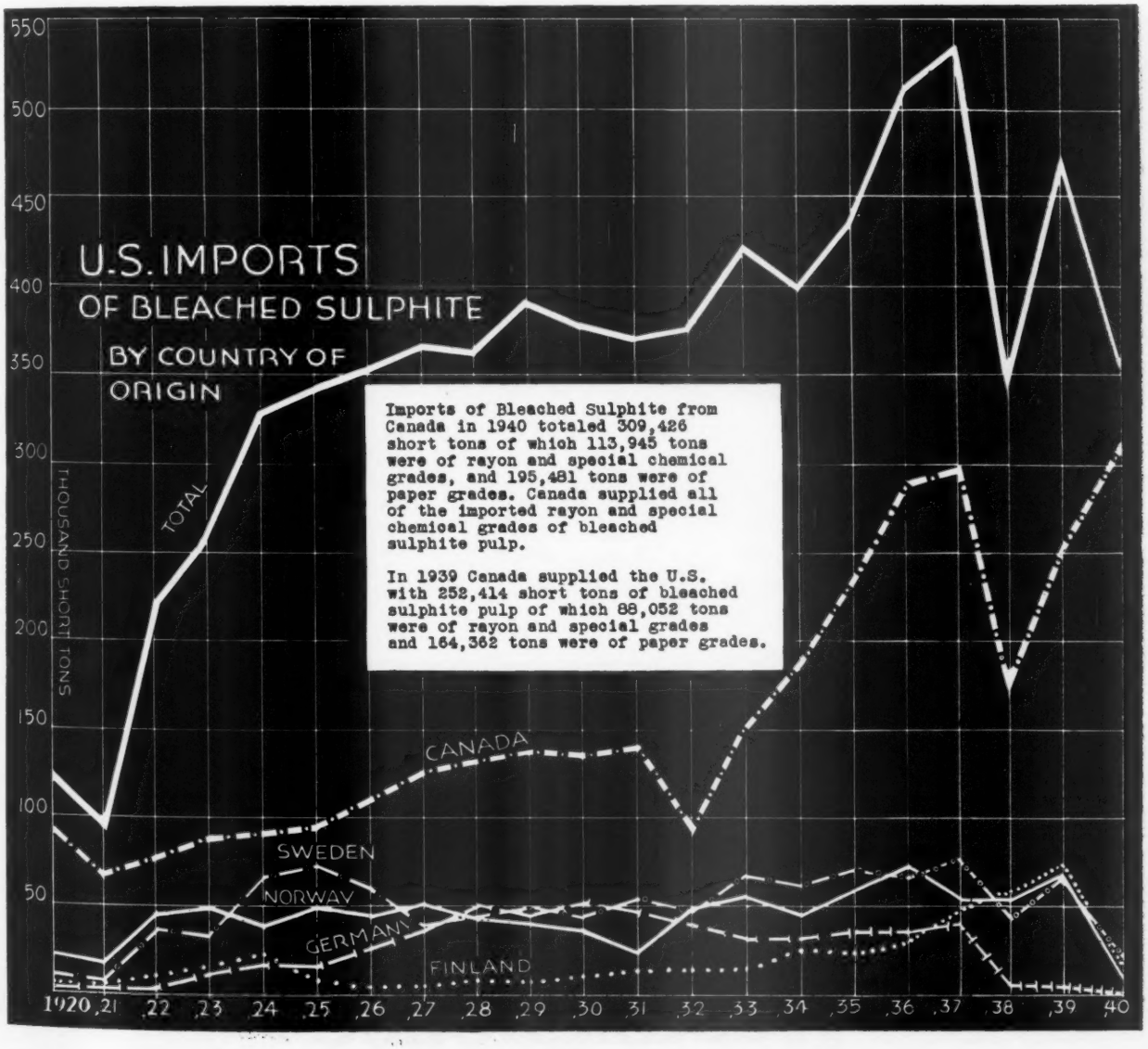
UNITED STATES

Imports of Bleached Sulphate Pulp—By Countries of Origin—1930-1940

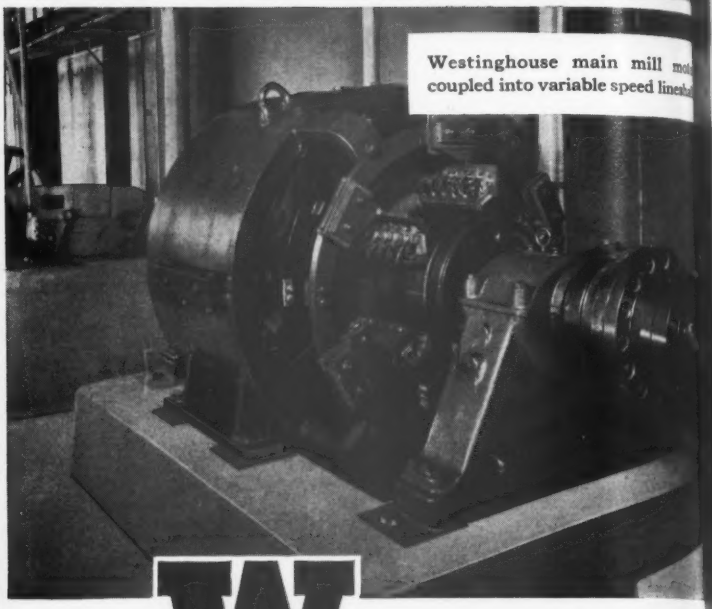
(Long Tons of 2,240 Lbs.)

	Canada	Finland	Germany	Norway	Sweden	Others	Total
1930	12,505	2,445	256	-----	-----	387	22,108
1931	22,940	2,263	160	28	7,851	-----	33,242
1932	19,872	1,522	-----	324	1,648	-----	23,366
1933	24,778	2,249	-----	242	9,159	-----	36,428
1934	30,804	2,740	-----	452	14,279	-----	48,275
1935-40 IMPORTS IN TONS OF 2,000 LBS.							
1935	51,199	4,113	-----	28	29,262	56	84,658
1936	55,244	5,440	-----	230	41,461	-----	102,375
1937	55,212	9,200	-----	-----	47,450	-----	111,862
1938	33,992	2,617	-----	310	53,254	-----	90,173
1939	46,139	8,196	-----	280	53,637	-----	108,252
1940	58,462	2,500	-----	-----	23,925	-----	84,887

Source—Department of Commerce, Bureau of Foreign and Domestic Commerce.


U.S. IMPORTS
OF BLEACHED SULPHITE
BY COUNTRY OF
ORIGIN
Imports of Bleached Sulphite from Canada in 1940 totaled 309,426 short tons of which 113,945 tons were of rayon and special chemical grades, and 195,481 tons were of paper grades. Canada supplied all of the imported rayon and special chemical grades of bleached sulphite pulp.
In 1939 Canada supplied the U.S. with 252,414 short tons of bleached sulphite pulp of which 88,052 tons were of rayon and special grades and 164,362 tons were of paper grades.
THOUSAND SHORT TONS
550
500
450
400
350
300
250
200
150
100
50
TOTAL
CANADA
SWEDEN
NORWAY
GERMANY
FINLAND
1920 ,21 ,22 ,23 ,24 ,25 ,26 ,27 ,28 ,29 ,30 ,31 ,32 ,33 ,34 ,35 ,36 ,37 ,38 ,39 ,40

Westinghouse synchronous motor starter and full automatic combination d-c motor and generator control for single-motor drive.



Westinghouse main mill mot
coupled into variable speed lines

Westinghouse single-motor paper machine drive steps up production

Equipped with Westinghouse single-motor drives, uniform speeds over a wide operating range are assured for lineshaft-driven paper machines. Maximum production is obtained . . . paper quality improved . . . and maintenance reduced.

In addition to the MG set and main motor, this drive incorporates full automatic control and a speed regulator with exclusive Westinghouse features.

Many mills throughout the country are using Westinghouse single-motor drives to speed up production, improve quality and cut costs. It will pay you to look to Westinghouse for an economical solution of your machine drive or other paper mill problems. A staff of experienced engineers is at your service.

WESTINGHOUSE ELECTRIC & MFG. COMPANY, EAST PITTSBURGH, PA.

LOOK TO WESTINGHOUSE FOR LATEST DEVELOPMENTS IN THIS EQUIPMENT:

MOTORS AND CONTROL
•
GENERATORS
•
TURBINES
•
SWITCHGEAR
•
TRANSFORMERS
•
LIGHTING
•
INSTRUMENTS

Westinghouse

J-94457

TIME-SAVER FOR THE PAPER INDUSTRY

UNITED STATES

Imports of Bleached Sulphite from 1920 to 1940

By Countries of Origin

(Long Tons of 2,240 Pounds)

Countries—	Canada	Sweden	Germany	Norway	Finland	All Others	Total
1920	86,055	6,788	200	13,435	5,329	2,663	114,470
1921	59,198	5,770	1,335	8,180	7,591	2,931	85,005
1922	122,347	39,340	3,152	39,153	5,393	3,708	213,093
1923	132,138	41,958	12,655	46,849	12,063	4,917	250,580
1924	135,943	64,221	17,054	35,279	6,960	12,912	272,369
1925	137,598	71,577	16,662	48,111	4,130	8,898	286,976
1926	152,764	58,623	25,944	45,416	2,739	9,332	294,818
1927	171,280	46,369	25,341	49,928	4,595	13,617	311,138
1928	176,807	36,237	39,592	40,212	1,500	13,578	307,926
1929	187,469	47,199	45,471	39,312	7,306	7,478	334,235
1930	181,195	43,916	46,101	36,758	7,335	7,358	322,693
1931	185,037	49,063	47,155	18,011	8,922	7,923	316,111
1932	150,589	46,735	38,185	46,971	11,708	24,340	318,528
1933	194,754	65,264	32,564	56,303	22,420	29,328	400,633
1934	179,320	59,253	34,661	46,878	20,054	15,318	355,484
1935-40 IMPORTS IN TONS OF 2,000 LBS.							
1935	225,773	69,237	30,231	52,407	29,550	22,225	429,423
1936	281,062	67,309	34,792	70,950	31,131	26,924	512,168
1937	286,504	62,100	35,996	55,614	47,433	24,214	511,961
1938	167,024*	44,822	5,051	52,589	53,201	14,972	337,660
1939	252,414**	64,855	8,702	65,516	70,611	12,011	474,109
1940	309,426†	17,535	.....	10,822	13,256	1,877	352,916

Source—Bureau of Foreign and Domestic Commerce, U. S. Department of Commerce.

*Includes 65,218 tons Rayon pulp.

**Includes 88,052 tons Rayon pulp.

†Includes 113,945 tons Rayon pulp.

UNITED STATES

Imports of Unbleached Sulphite—1920 to 1940

(Long Tons—2,240 Pounds)

	Sweden	Canada	Finland	Germany	Norway	All Others	Total
1920	73,957	207,667	13,502	7,193	3,627	2,062	308,008
1921	73,070	88,112	24,696	14,308	3,137	4,770	208,093
1922	193,218	146,690	27,642	16,968	29,134	4,048	422,700
1923	159,065	167,725	58,602	42,851	21,222	12,388	461,853
1924	226,978	192,308	48,007	54,944	26,079	13,554	561,920
1925	193,034	253,670	48,996	42,362	20,639	20,083	579,284
1926	244,925	226,153	61,804	54,305	18,613	23,123	628,923
1927	299,875	179,630	70,106	25,487	17,747	21,011	613,856
1928	297,130	179,751	92,778	23,933	23,456	23,607	640,660
1929	350,152	190,565	109,121	16,822	18,325	16,471	701,456
1930	331,968	180,417	99,881	19,049	20,210	14,152	665,075
1931	300,682	88,604	97,467	22,212	10,195	16,850	536,010
1932	270,894	56,335	95,579	42,330	31,402	19,667	516,207
1933	346,684	76,537	116,019	43,895	26,597	33,271	643,003
1934	314,984	80,867	112,562	47,319	22,529	24,856	603,117
1935-40 IMPORTS INTONS OF 2,000 LBS.							
1935	377,320	67,404	146,166	50,024	16,539	35,573	693,026
1936	425,753	89,359	157,324	39,871	25,391	49,022	786,720
1937	539,488	128,469	123,112	32,740	28,479	67,326	919,614
1938	393,661	86,625	117,167	32,917	4,892	53,060	668,322
1939	374,003	110,144	115,844	12,440	14,145	34,617	661,193
1940	122,243	219,016	33,184	.....	1,646	4,824	380,914

Source: Department of Commerce, Bureau of Foreign and Domestic Commerce.

PACIFIC COAST
Imports of Pulpwood
1940

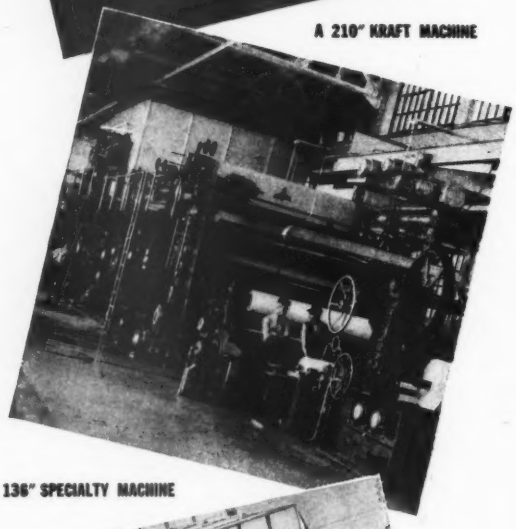
Customs District	Pulp—Rough: Spruce Cords	Pulp—Rough: Spruce Value	Pulp—Rough: Other Cords	Pulp—Rough: Other Value	Pulpwood—Peeled: Spruce Cords	Pulpwood—Peeled: Spruce Value	Pulpwood—Peeled: Other Cords	Pulpwood—Peeled: Other Value	Pulpwood–Chipped Cords	Pulpwood–Chipped Value	Pulpwood–Rossed Cords	Pulpwood–Rossed Value
Washington	112	$462	483	$1,964	108	$452	10,448	$43,548	47,919	$32,210	.....	.....

Total—All imported through the State of Washington Customs District—59,070 cords, valued at $78,636.

Source: U. S. Department of Commerce, Bureau of Foreign & Domestic Commerce.

Important Facts
FOR THE PAPER MANUFACTURER

A 210" KRAFT MACHINE



A 136" SPECIALTY MACHINE

A 146" BOARD MACHINE

FOUR IMPORTANT FACTORS TODAY IN MILL OPERATION AND FOUND IN EVERY BAGLEY AND SEWALL PAPER MACHINE:

SPEED: Each year brings new demands for increased production. Engineering skill and modern manufacturing facilities in the building of paper machines are important factors for the paper manufacturer to consider. Bagley and Sewall machines have made many world records for speed, and today still stand among the leaders.

EASE OF OPERATION: There is no smoother operating paper machine than a Bagley and Sewall product. From blueprint to the finished machine, all engineering and manufacturing skill is brought forth to insure this important factor.

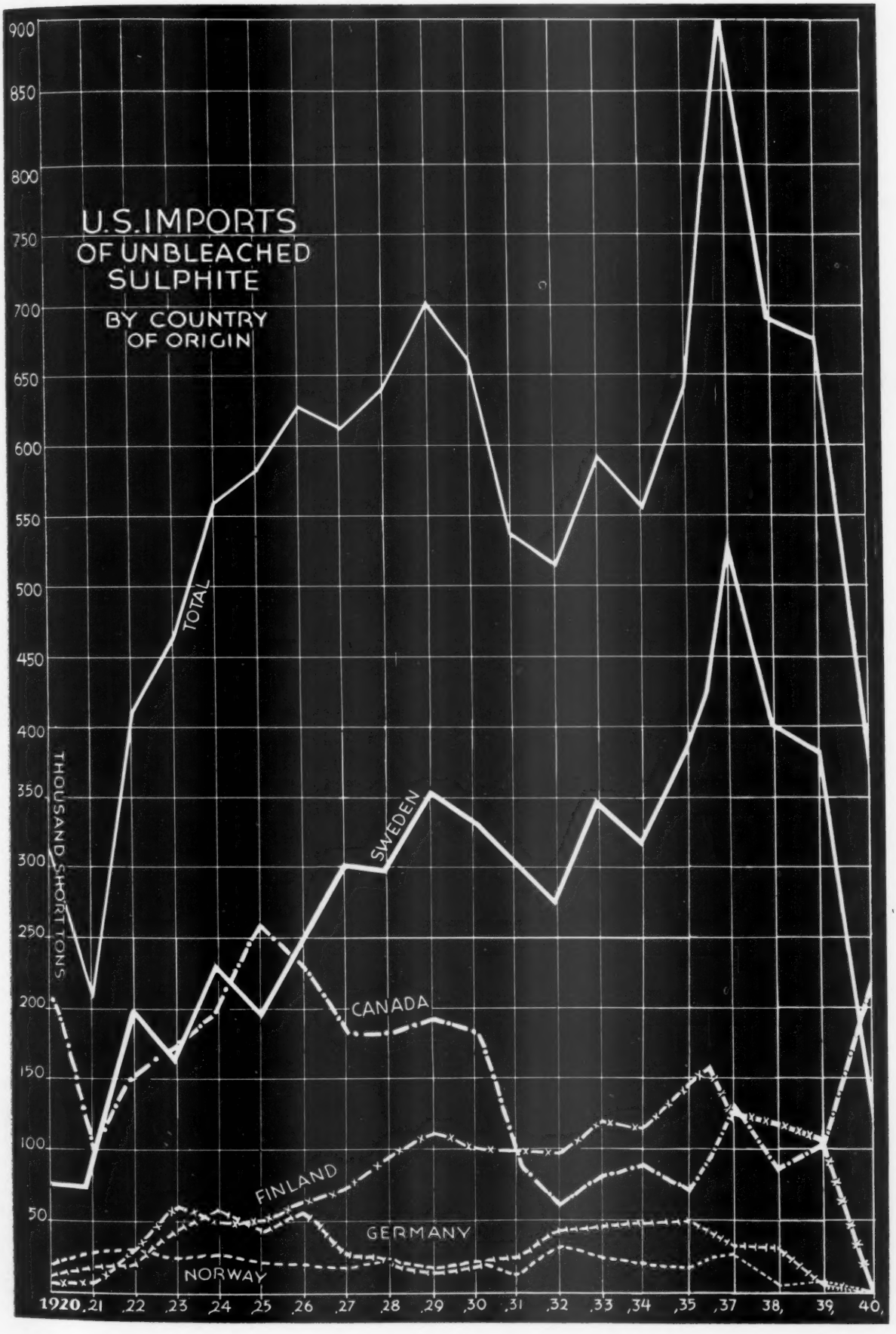
LOW MAINTENANCE: Incorporated in the building of any Bagley and Sewall product is the thought of keeping maintenance charges at a minimum. A constant program of improvement is observed, ever mindful that machine shutdowns or repairs are costly factors in mill operation.

QUALITY: Paper manufacturers are fully aware that their position in today's competitive markets is largely dependent on QUALITY. A product is no better than the machine on which it was made. A Bagley and Sewall machine provides complete control at any point in manufacture. It is the most efficient unit in the industry today for producing a quality product.

IF YOU ARE CONTEMPLATING A MAJOR INSTALLATION OR MODERNIZING EXISTING EQUIPMENT, ASK FOR ONE OF OUR ENGINEERS TO CALL.

BAGLEY & SEWALL

WATERTOWN, NEW YORK


U.S. IMPORTS
OF UNBLEACHED
SULPHITE
BY COUNTRY
OF ORIGIN
THOUSAND SHORT TONS
900
850
800
750
700
650
600
550
500
450
400
350
300
250
200
150
100
50
TOTAL
SWEDEN
CANADA
FINLAND
GERMANY
NORWAY
1920
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
37
38
39
40

ST. REGIS

FULL BLEACHED KRAFT PULP

Manufactured from

WESTERN HEMLOCK

Establishing an enviable reputation with manufacturers of high grade papers and cellulose products in the world markets.

ST. REGIS PAPER COMPANY

Kraft Pulp Division

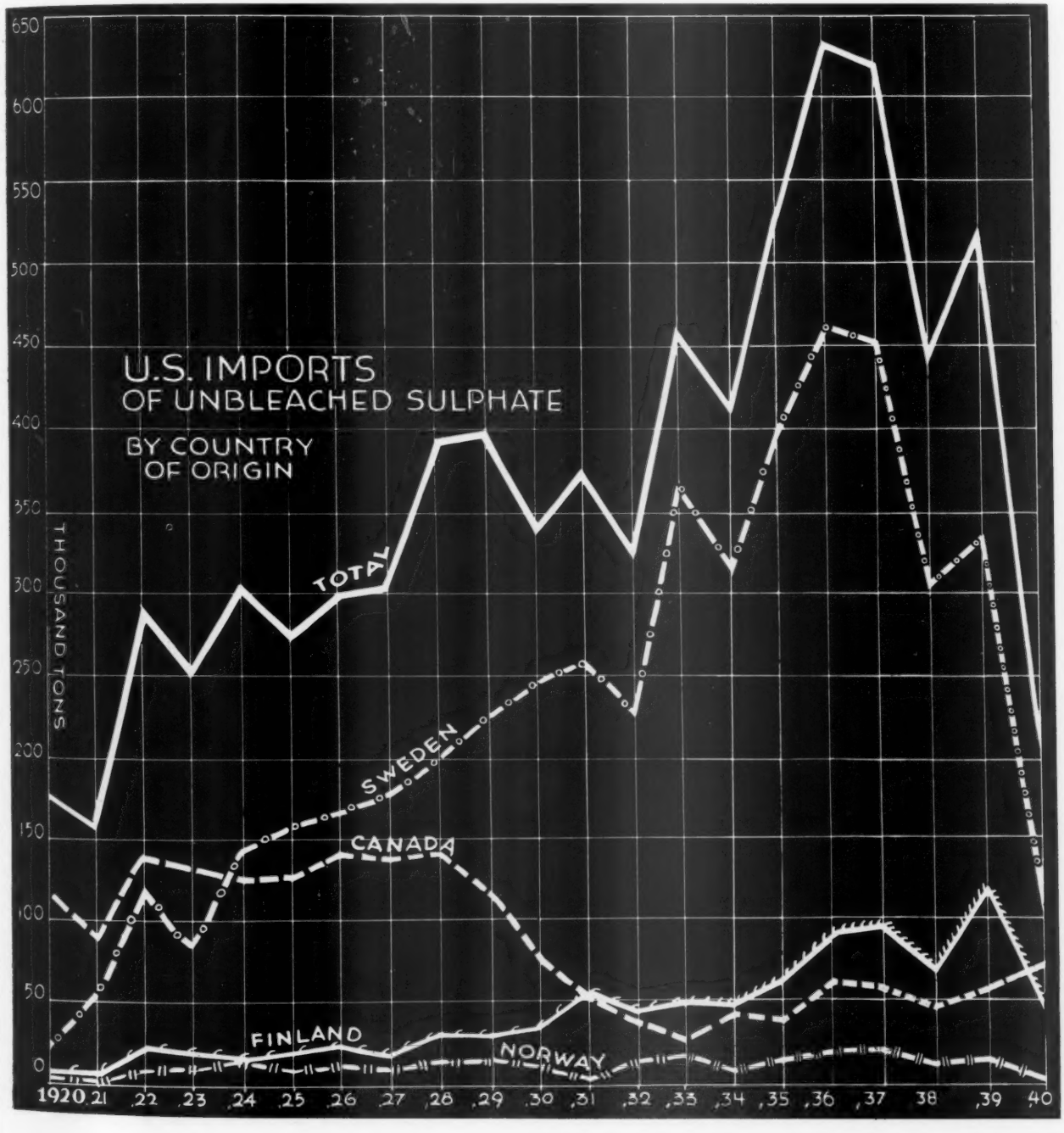
TACOMA, U. S. A.

Many new advanced features have been incorporated in methods and mechanical devices employed in our Tacoma, Washington, mill to insure latest up to date process in manufacturing FULL BLEACHED KRAFT PULP from WESTERN hemlock.

PACIFIC COAST PAPER IMPORTS
1940
(Short Tons — Value)

Customs District	Newsprint Tons	Newsprint Value	Greaseproof & Waterproof Tons	Greaseproof & Waterproof Value	Kraft Wrapping Tons	Kraft Wrapping Value	Other Wrapping Tons	Other Wrapping Value	TOTALS Tons	TOTALS Value
San Diego	4,564	$ 188,249	----	-----	----	-------	----	-----	4,564	$ 188,249
Los Angeles	61,677	2,897,485	----	-----	27	1,678	----	----	61,704	2,899,163
San Francisco	32,317	1,475,301	58 lbs.	12	14	1,114	495 lbs.	95	32,331	1,476,415
Oregon	------	----------	----	-----	2	137	----	-----	2	137
Washington	74,132	3,273,164	----	-----	----	-------	----	-----	74,132	3,273,164
Totals	**172,690**	**$7,834,199**	**58 lbs.**	**$12**	**43**	**$2,929**	**495 lbs.**	**$95**	**172,733**	**$7,837,128**

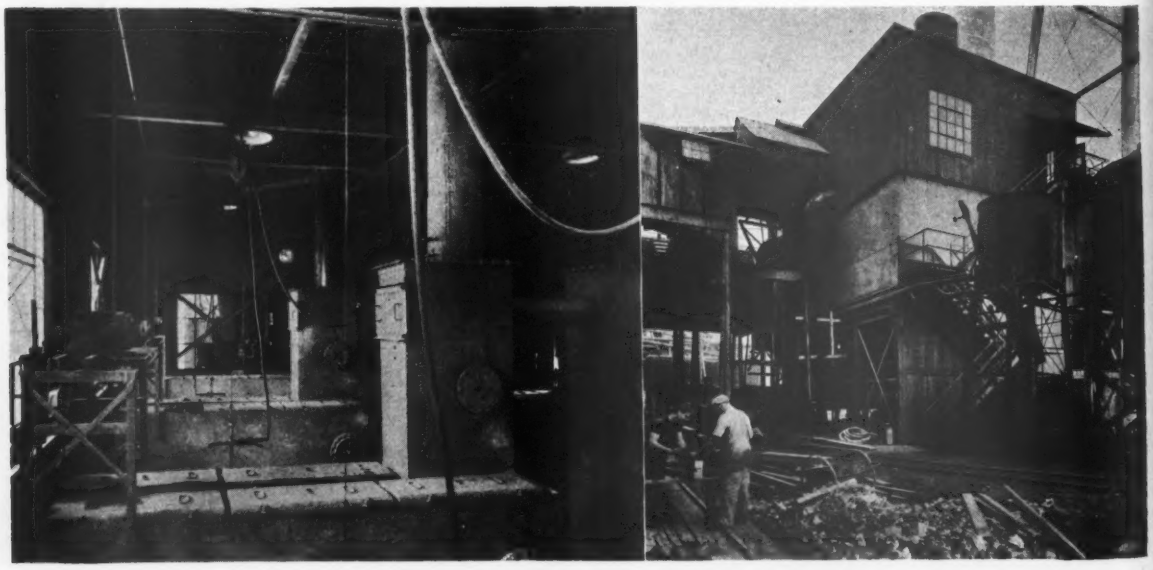
Source: U. S. Department of Commerce, Bureau of Foreign & Domestic Commerce.



TO SOME PAPER MILL MEN PRECIPITATION IS STILL RAIN!

To some of the boys in the mill precipitation may only mean wet feet and a head cold. To the engineers and operators though precipitation means collecting six tons of sodium salts in one day's operation of a Cottrell Electrical Precipitator. With the current tendency toward increased pulp production and rising prices for salt cake, Cottrell Electrical Precipitators for the collection of fume losses from recovery furnaces will pay out completely in months—not years. Cottrells are turning waste into cash and writing credits on the ledgers of some of the leading pulp and paper mills of the world. Cottrell users find low maintenance, durability and high efficiency with any desired capacity from a few c.f.m. to several million. Write today for a bulletin giving you all the facts on Cottrells and what they can do for you.

WESTERN PRECIPITATION CORP., 1017 West Ninth Street, Los Angeles, California
PRECIPITATION COMPANY OF CANADA, LTD., Dominion Square Building, Montreal
BRANCHES OR REPRESENTATIVES IN PRINCIPAL CITIES
Pioneers in Dust and Fume Control



Cottrell Precipitator in the kraft pulp, paper and board mill of the Longview Fibre Company, Longview, Washington.

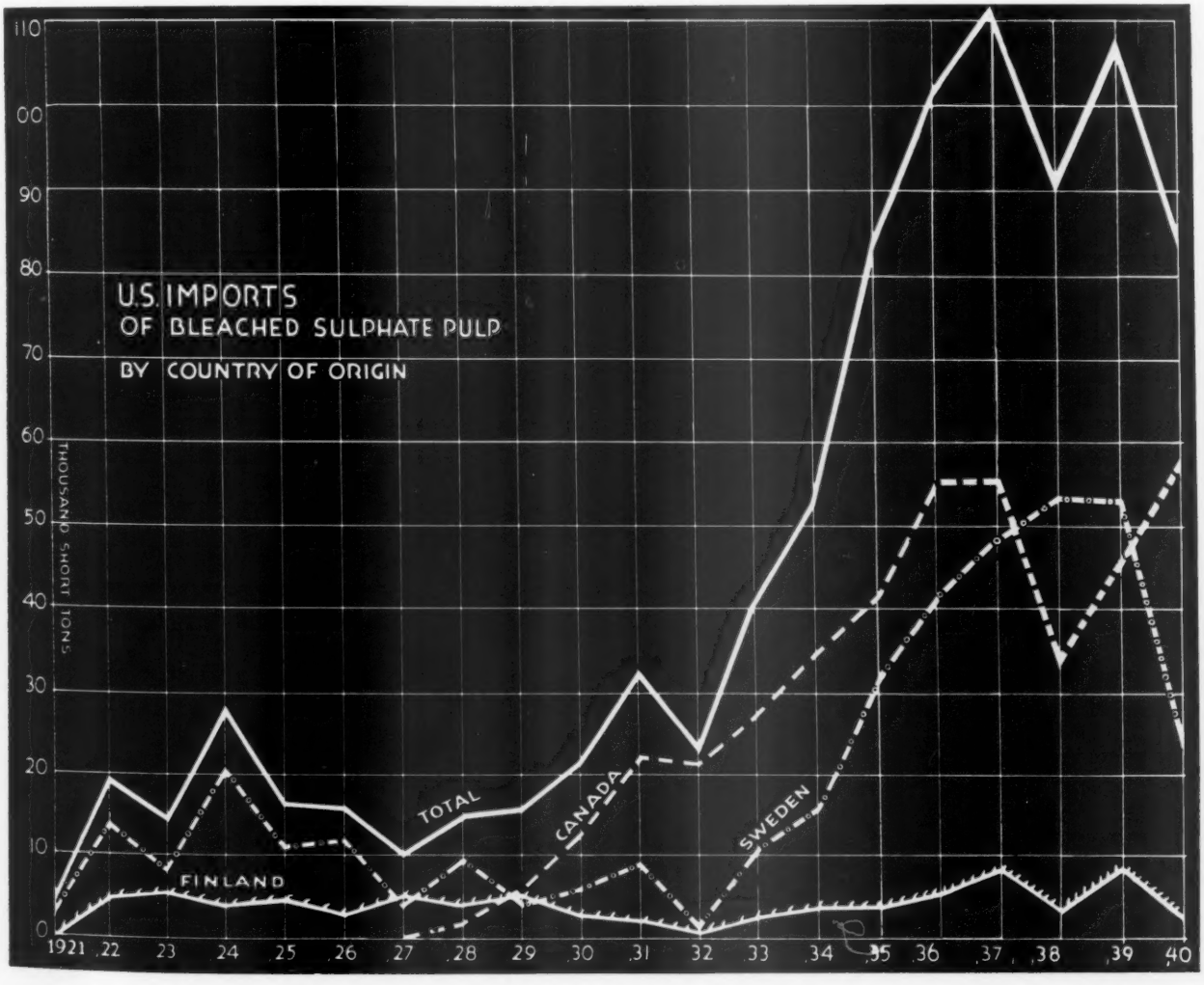
COTTRELL
ELECTRICAL PRECIPITATORS
TAKE THE DUST *OUT OF INDUSTRY*

UNITED STATES

Imports of Bleached and Unbleached Sulphate—1920 to 1940
By Countries of Origin
(Long Tons of 2,240 Pounds)

Countries:	Sweden	Canada	Finland	Norway	All Others	Total
1920	25,012	114,175	7,762	3,363	1,236	178,548
1921	57,702	89,729	5,799	522	2,733	159,006
1922	122,545	137,307	23,631	8,850	2,611	294,944
1923	84,739	131,304	20,089	10,258	2,728	249,118
1924	144,148	125,256	17,749	13,080	5,474	305,707
1925	159,282	127,567	21,170	10,568	4,035	323,222
1926	169,810	140,625	25,006	11,798	3,711	350,950
1927	180,897	138,660	19,602	10,690	2,102	351,951
1928	201,757	141,779	32,139	15,761	4,410	395,846
1929	227,760	116,290	31,907	17,079	6,333	399,639
1930	247,361	76,334	35,427	13,072	3,677	338,714
1931	259,238	52,700	55,692	4,385	6,183	378,198
1932	227,226	37,283	45,278	13,285	1,798	324,870
1933	375,583	54,412	49,288	16,513	2,612	498,408
1934	332,019	77,017	52,367	14,263	2,462	478,128
1935-40 IMPORTS IN TONS OF 2,000 LBS.						
1935	429,916	94,748	66,286	17,356	3,036	611,342
1936	499,373	117,460	92,765	23,544	4,955	738,097
1937	501,499	114,053	97,927	17,798	2,938	734,215
1938	349,383	82,302	71,539	12,370	668	516,262
1939	389,187	104,255	130,015	15,825	15,137	654,419
1940	130,714	127,344	45,684	4,722	.....	308,464

Source: Department of Commerce, Bureau of Foreign and Domestic Commerce.

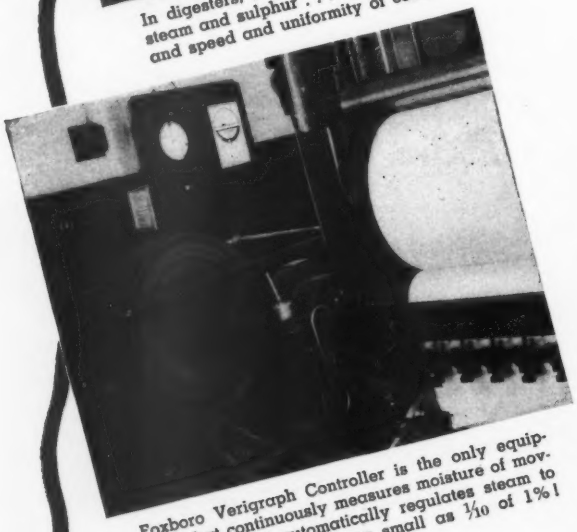


Foxboro Finds The Way

TO BETTER QUALITY AND COSTS!

Better stock is produced at lower cost through use of Foxboro Automatic Temperature Control on pulp grinders. Stone-life is greatly increased.

In digesters, Foxboro Control enables savings in steam and sulphur . . . increases long-fiber count, and speed and uniformity of cook.



Foxboro Verigraph Controller is the only equipment that continuously measures moisture of moving paper and automatically regulates steam to dryers. Feels changes as small as 1/10 of 1%!

When you are considering installation of additional instruments, don't make your final decision until you have investigated Foxboro's original instrument systems for many important papermaking operations.

Foxboro Instrumentation for pulp and paper mills is engineered by men who learned papermaking from practical mill experience. They know methods and desired results . . . develop instrumentation specifically to make processes operate more smoothly and more productively. Foxboro Instrumentation is creative instrumentation that *finds the better way!*

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Creative Instrumentation

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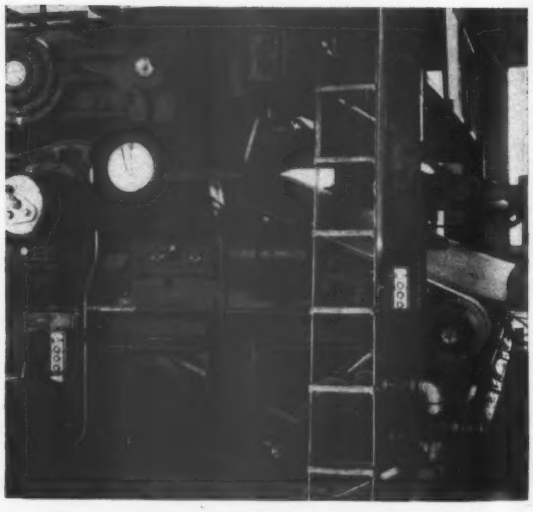
PORTLAND, Ore., 301 Lewis Bldg.
SAN FRANCISCO, Calif., 266 Fremont St.
SEATTLE, Wash., 1411 Fourth Ave.



Foxboro Pneumatic Loading for press rolls and other roll-equipment maintains exact, calibrated pressure on each end of roll independently.

PAPER AND PULP IMPORTS OF THE UNITED STATES

For the Twelve Months Ending Dec. 31, 1939 and 1940

PAPER IMPORTS

Articles—		12 Months, Ending Dec., 1939 Quantity	12 Months, Ending Dec., 1939 Dollars	12 Months, Ending Dec., 1940 Quantity	12 Months, Ending Dec., 1940 Dollars
Paper and Manufacturers		.....	126,793,442	.....	132,618,140
Printing Paper—					
Standard Newsprint, free	1000 lbs.	5,230,257	115,715,522	5,525,075	124,667,086
Other, n.e.s., dut.	lbs.	26,815,394	729,624	33,324,517	823,247
Grease and waterproof, dut.	lbs.	678,952	165,583	129,456	27,951
Kraft wrapping, dut.	lbs.	25,469,709	875,117	6,030,337	188,298
Other wrapping, dut.	lbs.	3,760,835	144,642	641,775	17,835
Writing and drawing, dut.	lbs.	1,031,878	282,800	526,484	151,929
Paper and envelope combinations, dut.		.....	28,564	.....	8,606
Surface coated, dut.	lbs.	648,883	282,925	186,230	96,446
Uncoated, decorated, embossed, dut.	lbs.	34,311	11,869	28,805	7,090
Tissue and Similar Papers—					
Not over 6 pounds to the ream, dut.	lbs.	1,234,552	673,917	1,109,056	602,820
Other, dut.	lbs.	603,359	261,645	594,726	286,437
Pulpboard, in rolls, dut.	lbs.	20,170,931	347,433	18,375,071	326,582
Paperboard, pulpboard, n.e.s., cardboard-leatherboard, etc., dut.	lbs.	36,661,935	833,230	22,743,158	495,923
Cigarette Paper, dut.	lbs.	15,502,667	3,581,712	12,123,685	2,677,220
Cigarette books and covers, dut.	lbs.	1,353,296	340,102	1,137,346	261,337
Hanging paper (wall paper), dut.	lbs.	481,880	168,429	496,373	113,923
Duplex, decalcomania, not printed, free	lbs.	812,749	162,685	1,143,233	234,560
Paper boxes, dut.	lbs.	.....	194,128	.....	142,765
Paper mache and pulp manufacturers, dut.		.....	329,887	.....	128,871
Other paper and manufacturers, dut.		.....	1,664,528	.....	1,359,849

PAPER BASE STOCK IMPORTS

Articles—		12 Months, Ending Dec., 1939 Quantity	12 Months, Ending Dec., 1939 Dollars	12 Months, Ending Dec., 1940 Quantity	12 Months, Ending Dec., 1940 Dollars
Paper Base Stocks		.....	88,409,149	.....	75,414,452
Pulpwood	cords	1,130,874	9,436,505	1,435,820	12,193,768
Rough:					
Spruce, free	cords	166,479	1,462,850	146,091	1,217,294
Other, free	cords	71,419	439,348	93,954	638,214
Peeled:					
Spruce, free	cords	694,529	6,382,739	984,773	9,113,232
Other, free	cords	126,657	809,185	133,701	869,364
Rossed:					
Spruce, free	cords	27,104	282,847	24,119	264,868
Other, free	cords	248	1,488	5,263	58,585
Chipped, free	cords	44,438	58,048	47,919	32,210
Wood and Other Pulp: (Ton, 2,000 pounds, air-dry weight)					
Wood Pulp	tons	2,026,209	75,875,739	1,224,570	60,193,666
Mechanically ground wood pulp:					
Unbleached, free	tons	221,144	5,090,715	171,513	4,719,572
Bleached, free	tons	6,810	128,037	.....	.....
Sulphite Wood Pulp:					
Unbleached, free	tons	661,090	23,395,210	380,913	16,755,489
Bleached, free	tons	473,863	24,251,535	352,917	23,231,971
Sulphate Wood Pulp:					
Unbleached, free	tons	546,398	16,973,986	223,577	9,095,741
Bleached, free	tons	107,952	5,627,830	84,887	5,791,309
Soda pulp, free	tons	8,952	408,426	10,763	599,524
Other pulp, free	tons	204	30,087	63	12,312
Rags for paper stock, free	lbs.	114,482,087	1,256,639	31,425,660	601,588
All other paper stock, free	lbs.	118,359,489	1,810,179	126,825,411	2,413,148

Source: U. S. Department of Commerce, Bureau of Foreign & Domestic Commerce.

PACIFIC COAST PULP IMPORTS—1940

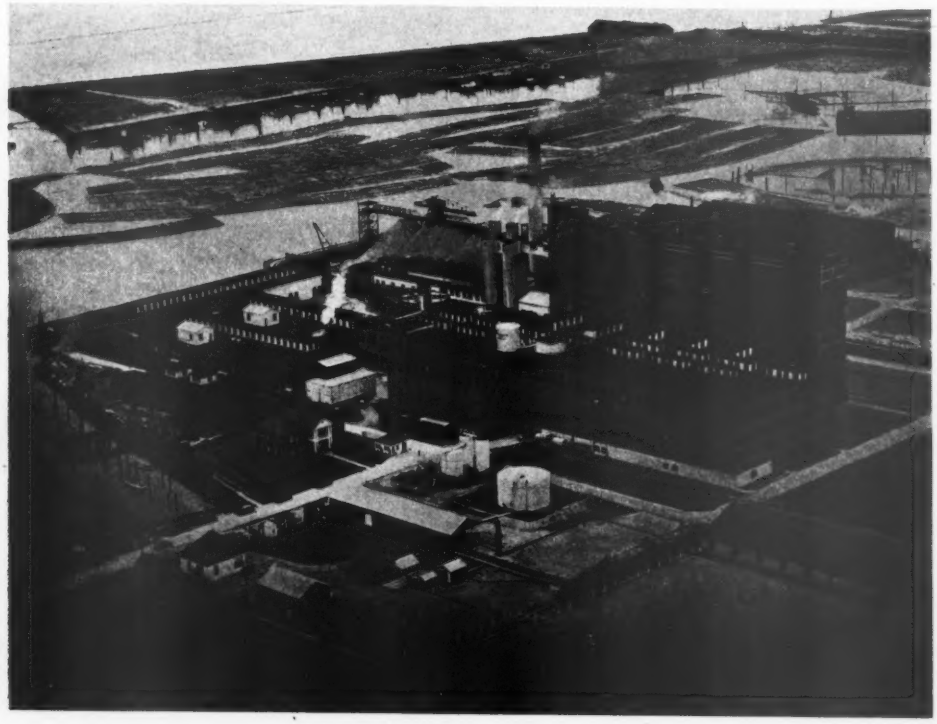
(Short Tons)

Customs District	Unbleached Sulphite Tons	Unbleached Sulphite Value	Bleached Sulphite: Rayon & Chemical Tons	Bleached Sulphite: Rayon & Chemical Value	Bleached Sulphite: Special Grades Other Tons	Bleached Sulphite: Special Grades Other Value	Unbleached Sulphate Tons	Unbleached Sulphate Value	Unbleached Groundwood Tons	Unbleached Groundwood Value	Bleached Groundwood Tons	Bleached Groundwood Value	Totals Tons	Totals Value
Washington	648	$ 34,877	14,699	$941,283	7,365	$389,010	936	$ 50.098	.....	.....	.....	.....	23,648	$1,415,268
San Francisco	3,081	32,001	.....	.....	.....	.....	2,098	61,582	.....	.....	.....	.....	5,179	93,583
Oregon	.....	.....	.....	.....	.....	.....	317	11,085	.....	.....	.....	.....	318	11,085
Los Angeles	3,268	33,798	.....	.....	.....	.....	2,152	56,790	143	2,318	.....	.....	5,563	92,906
Total	6,997	$100,676	14,699	$941,283	7,365	$389,010	5,503	$179,555	143	$ 2,318	.....	.....	34,707	$1,612,842

Source: U. S. Department of Commerce, Bureau of Foreign & Domestic Commerce.

High Grade
BLEACHED SULPHITE PULP

Annual Capacity Approximately 175,000 Tons



SOUNDVIEW PULP COMPANY
EVERETT · WASHINGTON

PROPERTY OF
SEATTLE PUBLIC LIBRARY

IMPORTS OF EUROPEAN NEWSPRINT INTO THE U. S.*

January 1, 1920—December 31, 1940 (Tons of 2,000 lbs.)

	Sweden	Germany	Finland	Norway	Other	Total
1920	18,875	21,066	3,244	5,916	1,337	50,438
1921	48,932	38,938	22,661	20,193	4,613	135,337
1922	51,812	32,838	26,205	17,292	4,741	132,888
1923	64,570	52,290	41,782	33,829	7,798	200,269
1924	60,827	38,840	35,639	17,259	3,238	155,803
1925	65,518	25,862	21,683	17,030	2,421	132,514
1926	46,020	12,884	34,292	6,176	554	99,926
1927	66,920	7,096	29,330	16,796	1,919	122,061
1928	55,718	9,170	40,237	10,864	418	116,407
1929	50,717	9,741	32,293	3,498	124	96,373
1930	69,268	13,788	41,913	9,326	.....	134,295
1932	66,688	21,910	47,992	14,444	35	151,069
1932	61,079	14,323	46,633	22,692	194	144,921
1933	68,062	12,058	56,577	16,591	15	153,303
1934	68,090	5,740	56,813	16,417	.....	147,060
1935	93,428	7,156	73,928	22,571	2	197,085
1936	87,488	9,772	122,972	22,110	10	242,352
1937	102,000	13,000	155,000	24,000	.....	294,000
1938	71,000	10,000	151,000	11,000	.....	243,000
1939	62,000	6,000**	195,000	42,000	4,000	309,000
1940	9,000	.....	23,000	2,000	.....	34,000
Total 21 years	1,288,012	362,472	1,258,194	352,004	31,419	3,292,101
Percent	39	11	38	10	0.9	100.0

**Shipments ceased with the beginning of the war.
Source: News Print Service Bureau.

UNITED STATES
PULPWOOD IMPORTS

(Unit: 1 Cord—128 Cu. Ft.)

	Rough	Peeled	Rossed	Chipped	Total
1940	240,045	1,118,474	29,482	47,719	1,435,720
1939	237,898	821,186	27,352	44,438	1,130,874
1938	290,453	949,707	15,636	38,142	1,293,938
1937	274,470	1,185,687	24,309	38,402	1,522,868
1936	200,701	977,460	31,597	.....	1,209,758
1935	99,659	937,428	425	.....	1,037,332
1934	180,019	789,158	4,801	.....	973,978
1933	119,852	591,812	11,544	.....	723,208
1932	114,366	531,158	2,664	.....	648,188
1931	186,613	817,926	17,128	.....	1,021,667
1930	331,158	1,234,678	16,365	.....	1,582,201

Source: Department of Commerce, Bureau of Foreign and Domestic Commerce.

First California Newsprint in 1857

• The evening edition of The Bulletin on April 13, 1857, was the first issue of any California newspaper to be printed on California-made paper, according to the WPA history of journalism in San Francisco. The paper came from the old Taylor & Post Mill at Bolinas.

The Bulletin was one of the predecessors of the present San Francisco Call-Bulletin.

Manufacturers Urge Protection Of American Markets

• The following resolution was adopted by the National Association of Manufacturers at the Congress of American Industry in New York, December 13, 1940:

PREPARING FOR THE FUTURE

"In order to meet the inevitable international economic competition when peace comes, as well as the present problems of foreign trade under disturbed world conditions, steps should be taken now to insure informed, prompt and mobile action in a changing world.

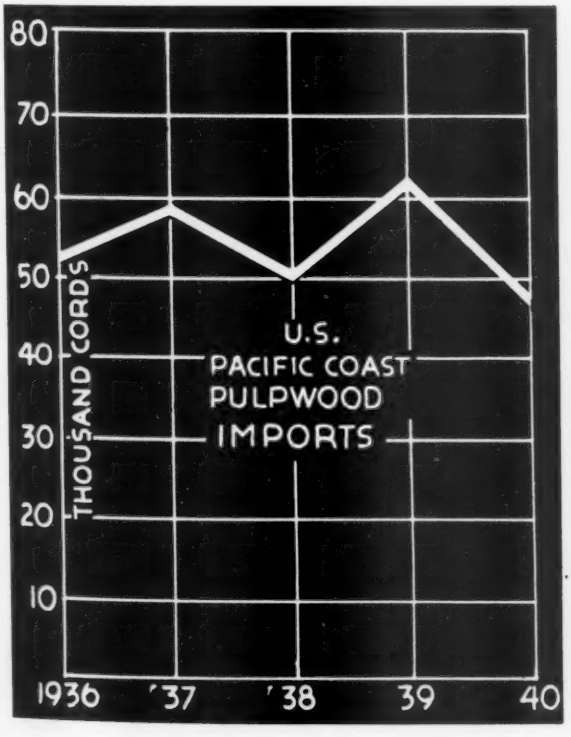
"Means should be provided to promote our foreign trade and at the same time protect American markets for American producers.

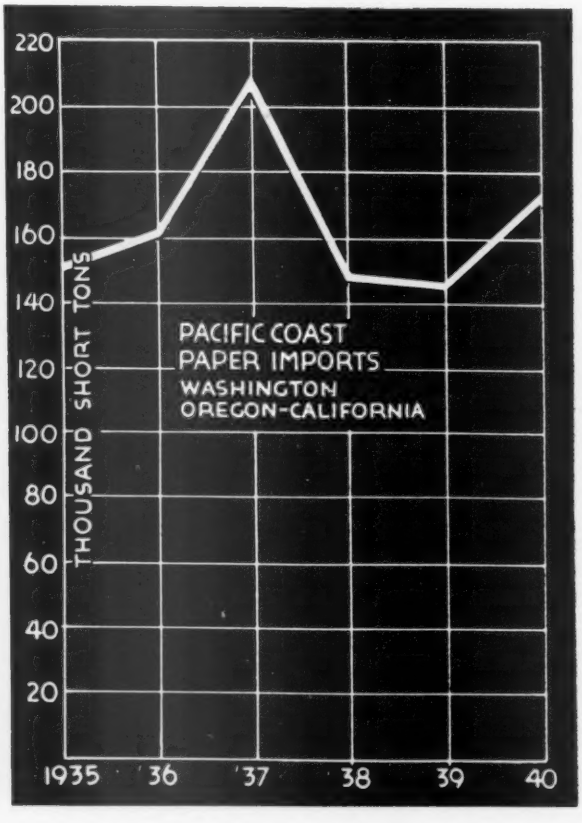
"We believe action should be taken:

"(1) To restore to the Congress its constitutional control over the regulation of foreign commerce and the protection of American producers.

"(2) To protect American industry, labor and agriculture from destructive foreign competition of nations employing low-wage or forced labor, depreciated currencies or other means to invade our domestic markets.

"(3) To protect all the products of the labor and the farms of America from competitive foreign products, whether dutiable or free, at least on the basis of American cost of production and marketing under American standards and wage levels."





Pulp and Paper Exports Rise Precipitately in 1940

Wood Pulp Exports Increase 244% in 1940 over 1939 in Tonnage and 358% in Value—Paper Exports Rise 108% in Value.

EXPORTS of wood pulp and paper from the United States were tremendously increased in 1940 by the European war which shut off sources of supply long depended upon by the countries of the world where pulp or paper or both are not manufactured.

The exports of wood pulp set a new record with 480,362 short tons valued at $29,746,046 in 1930. Compared with 1939 this was 340,858 tons or 244 per cent more than the 139,504 tons exported in 1939. In value the 1940 exports were $23,252,906 or 258 per cent higher than the 1939 value of $6,493,140.

In the previous record export year, 1937, the wood pulp tonnage was 302,500 short tons valued at $19,891,483. The 1940 exports exceeded 1937 by 177,862 tons or 58.8 per cent and in value by $9,854,563 or 49 per cent.

By grade the exports of unbleached sulphate pulp was the largest in 1940 with 157,568 short tons valued at $8,580,968. This was 142,752 tons or 963 per cent larger than the 14,816 tons exported in 1939 and in value the 1940 exports exceeded the 1939 value of $469,557 by $8,111,411 or 1,727 per cent.

Rayon grades of bleached sulphite pulp held second place in 1940 exports with 115,204 short tons valued at $8,652,328, the largest value for any grade exported. Compared with 1939 this was an increase of 66,972 tons or 138.8 per cent over the 48,232 tons exported in the latter year, and in value it was an increase of $5,537,362 or 177.7 per cent over the 1939 value of $3,114,966.

In third position was the paper making grades of bleached sulphite pulp with exports of 103,253 short tons valued at $6,758,679. Compared with the 1939 exports of 23,243 short tons valued at $1,021,115, this was an increase in tonnage of 80,010 or 365 per cent and in value of $5,737,564 or 561 per cent. Total bleached sulphite exports in 1940 amounted to 218,457 short tons valued at $15,411,007 as compared with 1939 exports of 71,475 tons valued at $4,136,081, a gain of 146,982 tons or 205 per cent in tonnage and $11,274,926 or 272 per cent in value.

Unbleached sulphite pulp exports from this country in 1940 totaled 72,739 short tons worth $3,788,777 as compared with 40,915 tons worth $1,332,554 in 1939. The 1940 gain in tonnage was 31,824 tons or 77.7 per cent and in value $2,456,223 or 184 per cent.

Total sulphite pulp exports in 1940 amounted to 291,196 short tons valued at $19,199,784, a gain of 178,806 tons or 159 per cent over the 1939 exports of 112,390 in tonnage and a gain of $13,731,149 or 251 per cent over the 1939 value of $5,468,635.

Bleached spulphate exports in 1940 totaled 18,205 short tons valued at $1,320,165. No accurate comparison can be made with prior years as 1940 was the first year bleached sulphate pulp was given a separate export classification. Previously this grade was included under all others. All others in 1939 totaled 8,285 short tons valued at $355,935. This was largely bleached sulphate but included some screenings.

Soda pulp exports in 1940 amounted to 10,006 short tons worth $645,129, an increase of 5,993 tons or 149 per cent over the 4,013 tons exported in 1939 and $446,116 or 224 per cent over the 1939 value of $199,013.

U. S. Wood Pulp

Exports

	Short Tons	Value
1940	480,362	$29,746,046
1939	139,504	6,493,140
1938	140,484	9,986,826
1937	302,056	19,892,144
1936	193,485	10,600,176
1935	171,710	8,632,971
1934	142,931	7,005,559
1933	79,191	3,113,883
1932	47,860	2,037,553
1931	53,307	2,405,642
1930	48,426	2,070,553

Great Britain Largest Buyer

● For the second year Great Britain was the largest buyer of United States wood pulp, taking 206,730 tons of all grades valued at $12,111,388 as compared with 32,562 short tons worth $1,345,682 in 1939 and 30,760 short tons worth $1,902,530 in 1938.

Japan, while taking more U. S. pulp in 1940 than in any year since the 216,000 tons bought in 1937, was a poor second in 1940 with 96,234 tons worth $7,144,116. Shortage of dollar exchange and loss of foreign markets for finished products, particularly rayon goods, accounted for Japan's not taking a larger tonnage in 1940 when her Scandinavian sources were shut off.

While in 1937 Japan took 75 per cent of the exports of all types of bleached sulphite pulp (chiefly rayon pulp) from this country, says the Bureau of Foreign & Domestic Commerce, her purchases in 1940 of this class of pulp dropped to 37 per cent of the total. This change was due not only to decreased quantity purchases compared with 1937, but also to increased demand by the United Kingdom in 1940 compared with 1937 for paper grade bleached sulphite pulp. In 1937 the United Kingdom took only 5 per cent of all bleached sulphite exported while in 1940 its share rose to 31 per cent of the total.

UNITED STATES EXPORTS OF WOOD PULP 1939-1940

(Tons of 2,000 lbs.)

Grade—	1939 Tons	1939 Value	1940 Tons	1940 Value
SULPHITE WOOD PULP				
Bleached—				
Rayon and Special Chemical Grades	48,232	$3,114,966	115,204	$ 8,652,328
Other	23,243	1,021,115	103,253	6,758,679
Total	71,475	$4,136,081	218,457	$15,411,007
Unbleached	40,915	1,332,554	72,739	3,788,777
TOTAL	112,390	$5,468,635	291,196	$19,199,784
SULPHATE WOOD PULP				
Unbleached	14,816	$ 469,557	157,568	$ 8,580,968
Other	8,285	355,935	18,205	1,320,165
TOTAL	23,101	$ 825,492	175,773	$ 9,901,133
SODA WOOD PULP	4,013	$ 199,013	10,006	$ 645,129
TOTAL—ALL GRADES	139,504	$6,493,140	476,975	$29,746,046

Source: Bureau of Foreign & Domestic Commerce.

Likewise, exports of unbleached sulphite pulp experienced the same shifting of trade. While exports of unbleached sulphite pulp, totaling around 73,000 tons, were 78 per cent greater than during 1939, they were 30 per cent under the all-time record of 1937. Shipments of this pulp during the year are estimated to have amounted to around 5 per cent of the amount consumed by the domestic industry during 1940.

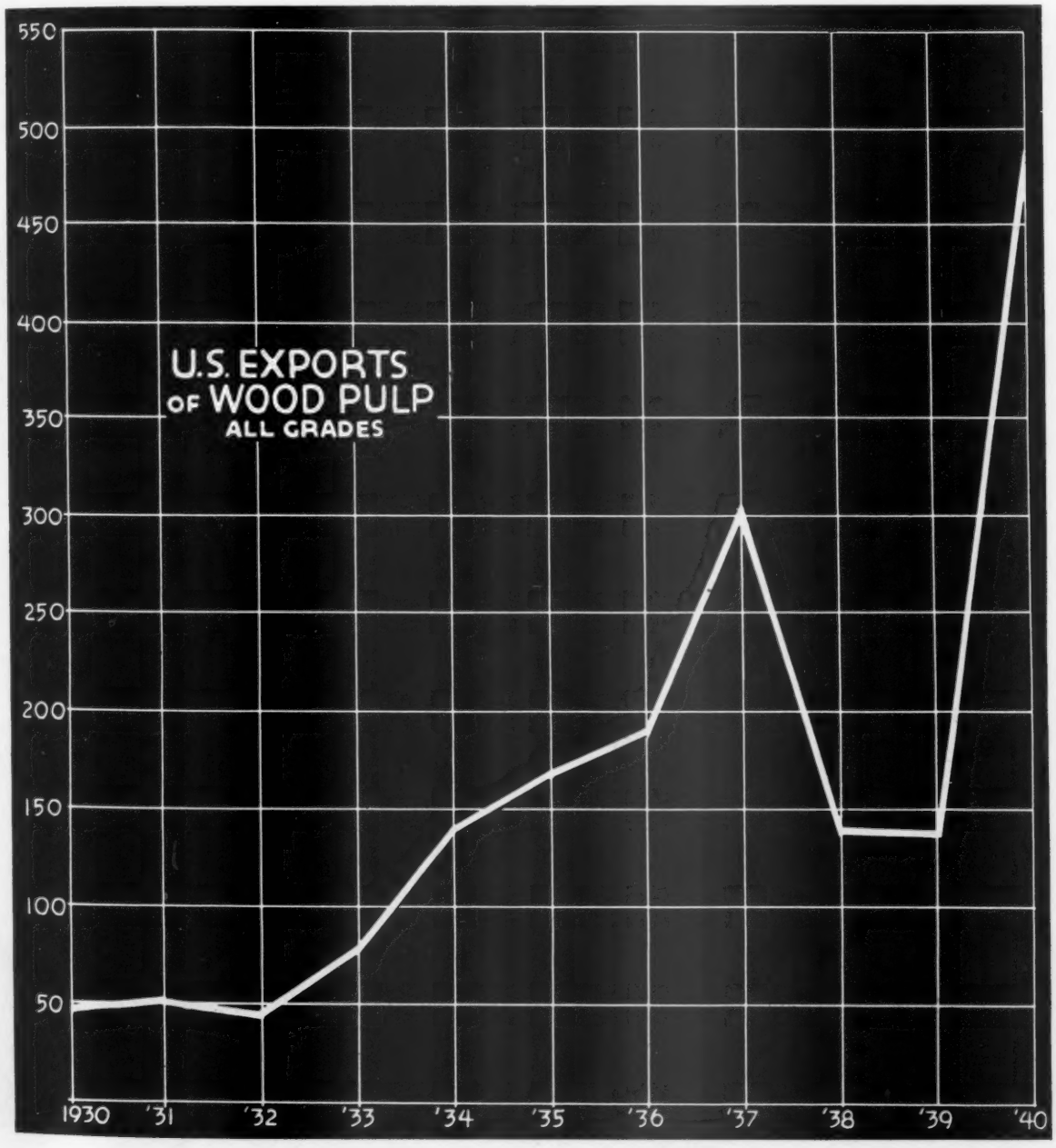
Paper Exports Set Record in 1940

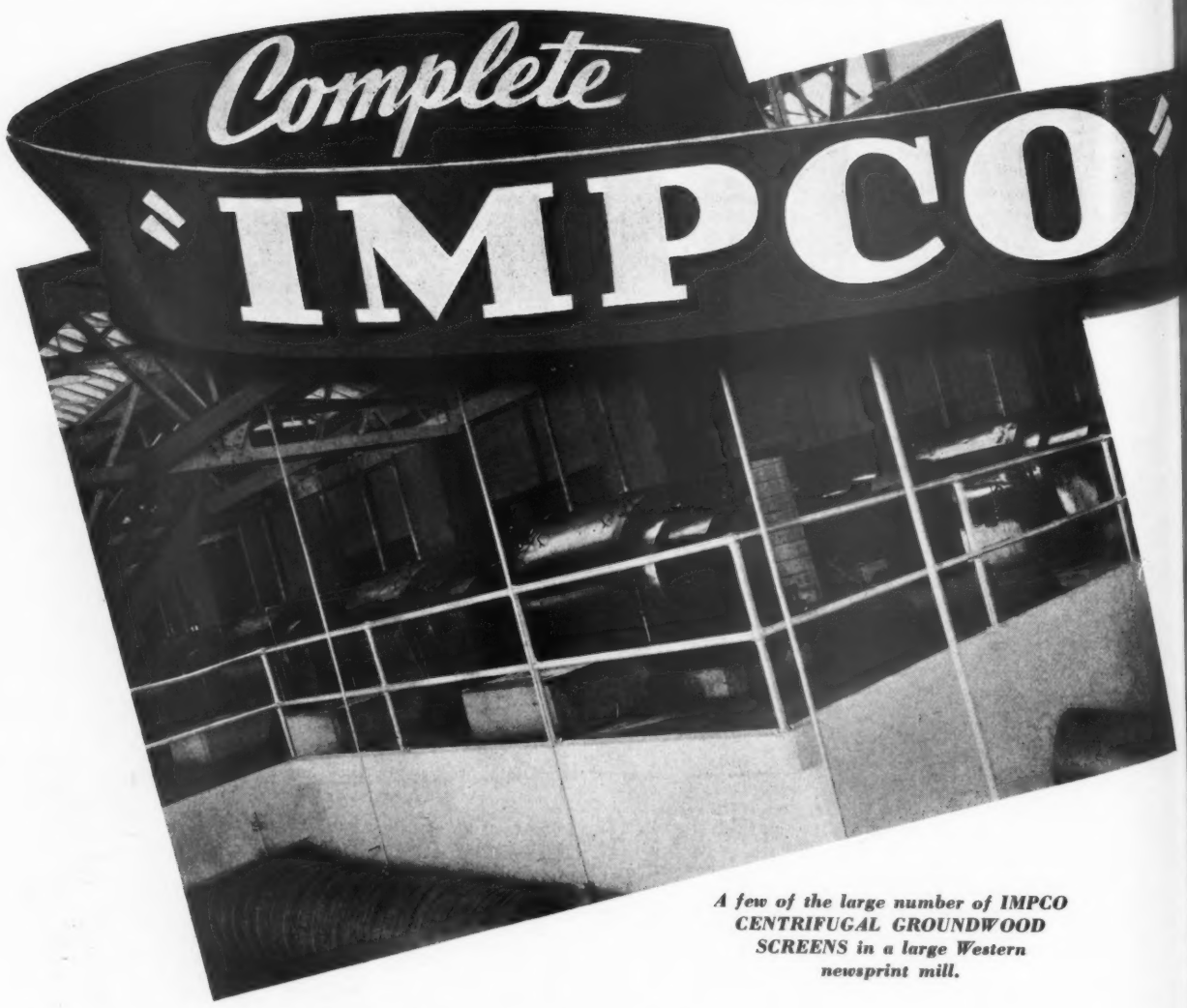
• Exports of paper, paperboard and paper products from the United States in 1940 set a new record being about 108 per cent in value above the previous high in 1939. Paper exports during the year totaled approximately 625,000 tons valued at $66,400,000. Writing paper exports were the greatest in value and overissue and old newspapers the largest in volume. The United Kingdom and India together took 34 per cent of the volume of paper exported. Overissue and old newspapers and kraft container board accounted for 43 per cent of the volume exported.

Paper exports have never been a large factor in either total United States exports or in the economy of the paper industry, says the Bureau of Foreign & Domestic Commerce. The record breaking exports of 1940 accounted for only 4 per cent of the total paper produced and slightly less than 4 per cent of all the paper consumed in the United States. The writing paper division probably benefitted most from exports in 1940, for in addition to being the most valuable paper exported, it constituted 8 per cent of our domestic production.

Overissue and old newspapers led the export list in volume during 1940 followed by boxboards and paperboards, writing, kraft wrapping, newsprint, uncoated book and other wrapping papers in the order mentioned. Together, these items made up 87 per cent of the total volume of paper shipped out of the country in 1940.

Only 7 of the 31 items classified on the paper export schedule, paper towels and napkins, sheathing and building papers, fiber insulating board or bat, wall paper, light boxes and cartons, cash register and adding machine papers and vulcanized fiber papers, registered decreases in 1940 compared with 1939. Reflecting war demands, kraft wrapping paper exports increased 362 per cent during 1940 compared with 1939; other wrapping paper 139 per cent; kraft con-





A few of the large number of IMPCO CENTRIFUGAL GROUNDWOOD SCREENS in a large Western newsprint mill.

THE COMPLETENESS of IMPCO'S SCREENING SERVICE for wood pulp is shown by these three photographs taken recently in a large Western newsprint mill.

In DAILY OPERATION are a large number of IMPCO Centrifugal Groundwood Screens running as primaries, secondaries and as rescreens. On sulphite stock, in the same mill, are IMPCO Centrifugal Knotters discharging directly to IMPCO Centrifugal Screens. The tailings are screened by IMPCO 12-plate Bronze Vat Flat Screens equipped with Dunbar Silent Drives.

Whether you need Flat Screens or Centrifugals, IMPCO has the RIGHT SCREEN FOR YOUR JOB.

IMPROVED PAPER MACHINERY

NASHUA • NEW HAMPSHIRE ◆ ◆

MAKERS OF THE FOLLOWING MACHINES FOR THE PAPER INDUSTRY

ROTARY AND FLAT SCREEN KNOTTERS · CENTRIFUGAL SCREENS · FLAT SCREENS WITH DUNBAR DRIV
(METAL OR CYPRESS VATS) · VACUUM FILTERS, INCLUDING SAVE-ALLS, WASHERS, HIGH DENSITY THICK
ENERS, LIME SLUDGE FILTERS, BLACK LIQUOR WASHERS, FORMING CYLINDERS · MULTIPLE STAG

PAPER AND PULP EXPORTS OF THE UNITED STATES

For the Twelve Months Ending Dec. 31, 1939 and 1940

PAPER EXPORTS

Articles:		12 Months, Ending Dec., 1939 Quantity	12 Months, Ending Dec., 1939 Dollars	12 Months, Ending Dec., 1940 Quantity	12 Months, Ending Dec., 1940 Dollars
Paper and Manufactures		----------	31,849,234	----------	66,390,491
Printing Paper—					
Newsprint paper	lbs.	26,990,612	688,627	87,832,869	2,643,826
Book paper, not coated	lbs.	30,773,065	1,830,813	85,291,825	6,222,246
Cover paper	lbs.	1,665,068	264,780	1,973,457	310,821
Greaseproof and waterproof paper	lbs.	9,240,404	2,093,471	18,356,928	3,010,508
Overissue and old newspaper	lbs.	171,270,465	1,635,994	219,381,644	2,980,607
Wrapping paper (except kraft)	lbs.	35,215,660	2,031,535	84,101,008	5,265,375
Kraft wrapping	lbs.	19,227,408	633,101	88,900,661	4,314,208
Surface coated paper	lbs.	14,152,326	1,494,409	21,561,048	2,242,593
Tissue and crepe paper	lbs.	12,893,784	1,166,888	25,640,016	3,882,847
Toilet paper	lbs.	10,535,551	863,571	15,124,446	1,224,520
Paper towels and napkins	lbs.	5,959,894	475,163	5,723,189	447,504
Kraft container board	lbs.	----------	----------	202,151,707	5,077,234
Other boxboard (paperboard and strawboard)	lbs.	113,595,050	2,453,978	100,736,773	3,357,463
Bristols and bristol board	lbs.	2,529,037	187,998	4,259,640	296,347
Other paper board	lbs.	32,948,975	1,441,390	110,849,501	4,434,349
Sheathing and building board	lbs.	13,556,364	446,438	12,031,127	451,066
Fiber insulating board or bat	sq. ft.	44,908,526	1,189,959	35,884,351	1,078,544
Wall board and paper or pulp	sq. ft.	26,057,282	893,188	48,116,407	1,509,120
Blotting paper	lbs.	3,128,295	364,536	3,397,024	396,702
Filing folders, index cards and other office forms	lbs.	1,220,598	392,530	1,265,995	397,953
Papeteries (fancy writing paper)	lbs.	280,973	62,753	412,382	84,254
Other writing paper	lbs.	37,972,103	2,521,919	99,217,879	6,824,534
Paper hangings (wall paper)	Rolls	1,283,881	130,612	1,198,014	123,251
Paper bags	lbs.	18,342,846	1,180,770	14,070,659	793,453
Boxes and cartons	lbs.	19,372,613	1,123,885	20,810,276	1,226,043
Envelopes	lbs.	1,078,572	212,240	1,360,284	269,669
Vulcanized fiber sheets, strips, rods and tubes	lbs.	4,792,848	1,246,703	4,612,601	1,193,554
Cash register and adding machine paper	lbs.	5,509,066	368,918	5,253,858	341,000
Other paper and paper products		----------	4,473,065	----------	5,100,909

PAPER BASE STOCK EXPORTS

Articles:		12 Months, Ending Dec., 1939 Quantity	12 Months, Ending Dec., 1939 Dollars	12 Months, Ending Dec., 1940 Quantity	12 Months, Ending Dec., 1940 Dollars
Paper base stocks		----------	8,599,960	----------	32,469,519
Pulpwoods	cords	50,165	351,274	61,932	471,367
Wood pulp (Ton, 2,000 lbs. air-dry weight)					
Sulphite wood pulp:					
Bleached	tons	71,475**	4,136,081	218,457†	15,411,007
Unbleached	tons	40,915	1,332,554	72,739	3,788,777
Sulphate wood pulp, bleached & unbleached		*	*	175,773	9,778,964
Soda wood pulp	tons	4,013	199,013	10,006	645,129
Other wood pulp	tons	23,101	825,492	4,400	122,139
Rags and other paper stock	lbs.	102,902,204	1,755,501	150,704,038	2,152,136

*Included under other wood pulp.
**Includes 48,232 tons of rayon and special chemical grades valued at $3,114,966.
†Includes 115,204 tons of rayon and special chemical grades valued at $8,652,328.
Source: U. S. Department of Commerce, Bureau of Foreign & Domestic Commerce.

BRITISH COLUMBIA

Pulp and Paper Exports

From All British Columbia Ports

(Compiled by Vancouver Merchants' Exchange—Short Tons)

Destination—	1931	1932	1933	1934	1935	1936	1937	1938	1939
Australia	11,835	15,314	14,685	26,053	26,026	42,876	18,810	34,237	46,335
Argentine	----------*	19,752	28,604	3,985	----------	----------	----------	----------	----------
Central and South America	22,637	6,404	12,693	7,314	2,867	----------	2,628	2,041	**1,284
Canada (Eastern ports)	4,457	3,820	4,620	24,800	27,677	29,614	29,210	23,566	33,595
China	489	16,105	26,494	40,062	3,281	5,084	1,651	1,401	27,181
Japan	78,631	59,959	100,257	93,212	155,530	131,795	83,764	14,236	
New Zealand	5,363	4,251	4,254	2,845	3,206	5,289	2,331	1,343	1,880
United Kingdom	9,047	486	347	6,953	4,164	3,698	16,498	6,692	5,793
United States	157,943	130,771	117,733	128,224	123,343	175,861	205,981	134,331	199,737
Other Countries	458	731	4,984	11,611	4,989	3,171	12,015	6,123	10,067
Total Short Tons	290,860	257,724†	314,671	345,059	351,083	397,388	372,888	223,970	325,872

*Argentine shipments in 1931 and 1935 are included under Central and South America.
†Includes 131 tons of paper shipped from New Westminster, destination not available.
**Does not include Central America.

Due to wartime regulations export data for 1940 are not available for publication.

BLEACHED AND UNBLEACHED

SULPHITE PULP

Produced by the

PULP DIVISION · WEYERHAEUSER TIMBER CO.

is manufactured out of

WEST COAST HEMLOCK

Harvested in Weyerhaeuser logging operations from company-owned timberlands

tainer board, 137 per cent; and all other boxboard shipments 258 per cent. Reflecting demands of South American countries, exports of newsprint paper increased 225 per cent; book paper, 177 per cent; and writing paper 161 per cent.

B. C. Pulp and Paper To Over 40 Countries

● British Columbia pulp and paper were shipped to more than forty countries last year, and production was valued at nearly $23,000,000—believed to be an all-time record.

Total production of newsprint was 262,144 tons, divided between Powell River Company and Pacific Mills. Other paper manufactured totalled 68,428 tons, chiefly by Pacific Mills and Westminster Paper Company and Sidney Roofing Company. Raw pulp to the amount of 123,000 tons was shipped by Powell River Company, Pacific Mills and British Columbia Pulp & Paper Company's mills.

With markets steady and firm, partly due to withdrawal of Scandinavian competition due to the war, the gains in manufacture were consistent throughout the first three quarters of the year, with the industry as a whole operating at 90 per cent of plant capacity.

Increased market in the United States, more buying of paper products within Canada, and steady exports to all British destinations except for occasional shipping dislocation, featured the year's trend.

Newsprint production at 262,144 tons compared with 216,542 tons in 1939. Wrapping and other papers amounting to 68,428 tons compared with 50,870 tons the previous year. A total of 315,000 tons of pulp were converted into paper, compared with 249,000 tons the previous year.

Shipments of raw pulp, chiefly to destinations on this continent, aggregated 123,000 tons, compared with 82,500 tons in the twelve preceding months. Newsprint output was 30,000 tons in excess of the ten-year average.

All pulp and paper products, with a value of $22,971,000, contributed to gross forest products values of the year reported at $102,804,000, as now ascertained.

That made the year 1940 the peak year in British Columbia's forest output, comparing with $94,000,000 in 1928, and $93,000,000 in 1929, officials of the forest service state.

Export of Overissue News Increased in 1940

● The export of overissue and old newspapers from the United States developed into nearly a three million dollar industry during the calendar year 1940. Total exports last year, according to official figures issued by the U. S. Department of Commerce, reached 219,381,644 pounds for a declared valuation of $2,980,607. This is believed to establish a new high record, both in quantity and value, comparing with 171,270,465 pounds of a value of $1,635,994 in 1939, and with a previous high during the last eleven years of 209,151,107 pounds in 1932 in volume, and $2,013,511 in 1937 in value.

The average value of the newspapers exported during 1940, according to the Government's figures, was $1.358 per hundred pounds or roughly $27 per ton, as compared with 95.52 cents per hundred pounds or $19 a ton, in 1939; 66.15 cents per hundred pounds in 1938; $1.038 per hundred pounds in 1937; 67.55 cents in 1936; 67.29 cents in 1935, and 83.97 cents in 1934.

Overissue and old news exports during the last eleven calendar years, with values, follow:

	Pounds	Value
1940	219,381,644	$2,980,607
1939	171,270,465	1,635,994
1938	142,968,583	945,758
1937	193,818,066	2,013,511
1936	138,086,864	932,779
1935	166,398,277	1,121,726
1934	188,304,729	1,581,370
1933	143,607,766	1,059,738
1932	209,151,107	1,472,722
1931	208,112,807	1,538,564
1930	171,312,274	1,335,118

UNITED STATES PULP EXPORTS BY COUNTRIES OF DESTINATION — 1940

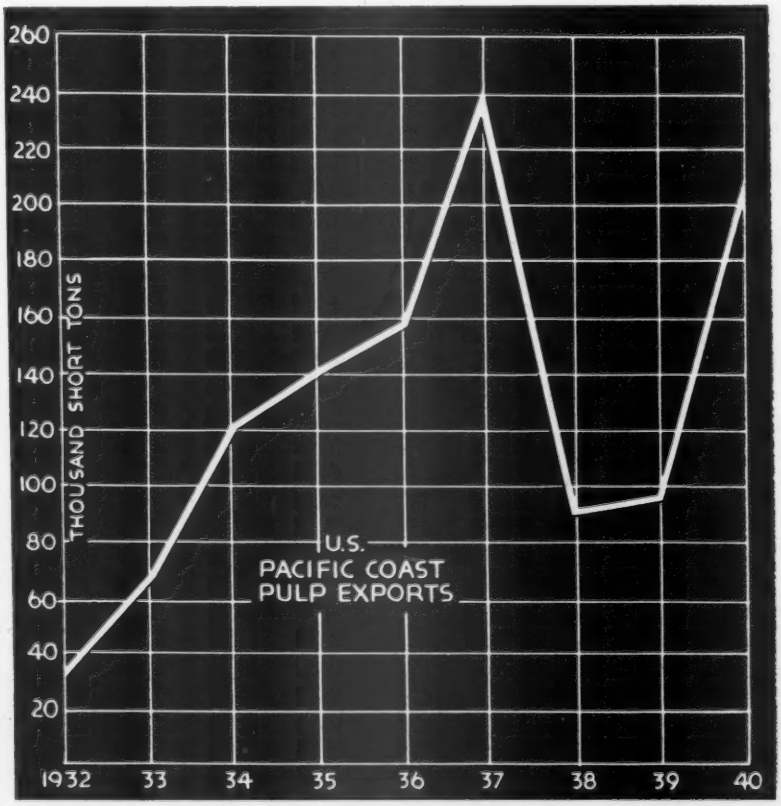
(Tons of 2,000 Pounds)

Country:	Tons	Value
United Kingdom	206,730	$12,111,388
Japan	96,234	7,144,116
Brazil	32,907	1,931,909
Australia	30,517	1,835,146
Mexico	29,484	1,691,031
France	18,112	1,170,512
Argentina	14,035	924,337
Canada	12,611	441,769
New Zealand	5,236	328,426
British India	3,666	193,147
Belgium	2,200	129,573
Peru	2,195	130,509
Portugal	1,177	76,359
All Others	25,258	1,637,778
Total	480,362	$29,746,000

U. S. Paper Exports Expand in First Two Months

● Exports of paper and manufactures thereof from the United States continue to climb. During February exports reached a declared value of $5,053,793, according to figures issued by the Bureau of Foreign & Domestic Commerce, making a total for the first two months of 1941 of $10,195,847.

This is an increase of $1,146,318, or 12.6 per cent over exports having a valuation of $9,049,529 in the corresponding two-month period of 1940.



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With a proved Hollander replacement ratio of 4 to 1, the JONES-BERTRAMS PATENT BEATER has a performance record unequalled by any other Beater.

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- **Uniformity—automatic control giving positive duplication of beating cycles.**
- **Improved quality.**
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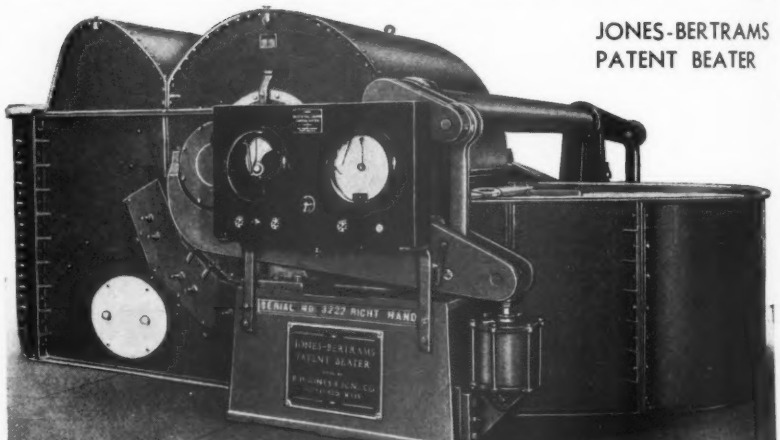
- **Lower HP per ton.**
- **Small required floor space.**

A new 64-page booklet gives the facts —yours for the asking.

●

Pacific Coast Representatives: PACIFIC COAST SUPPLY COMPANY, San Francisco, Portland, Seattle.



JONES-BERTRAMS PATENT BEATER

Jones

E. D. JONES & SONS COMPANY - PITTSFIELD, MASS.

Builders of Quality Machinery for Paper Mills

EXPORTS OF WOOD PULP FROM PACIFIC COAST PORTS 1934-1940

(Tons of 2,000 lbs.)

Customs Districts.	1934 Tons	1934 Value	1935 Tons	1935 Value	1936 Tons	1936 Value	1937 Tons	1937 Value	1938 Tons	1938 Value	1939 Tons	1939 Value	1940 Tons	1940 Value
Wash.	110,846	$6,078,757	127,896	$7,368,975	140,072	$7,680,896	201,734	$13,271,137	88,580	$7,062,869	93,306	$4,598,370	188,004	$12,165,717
Oregon	5,471	203,624	14,103	524,424	18,776	617,867	39,728	1,746,038	2,180	133,451	2,090	68,893	16,327	963,823
S. Francisco	13	1,803	.....	.....	121	4,241	.....	.....	1,637	48,969	350	15,417	460	208,524
Los Angeles	4,992	356,008	.....	.....	.....	.....	.....	.....	.....	.....	483	22,441	.....	.....
San Diego	14	693	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Totals	121,336	$6,640,885	141,999	$7,893,399	158,969	$8,303,004	241,462	$15,017,175	92,397	$7,245,289	96,229	$4,705,121	204,831	$13,348,064

Source: U. S. Department of Commerce, Bureau of Foreign and Domestic Commerce.

EXPORTS OF PAPER FROM PACIFIC COAST PORTS 1934-1940

(Tons of 2,000 lbs.)

Customs Districts.	1934 Tons	1934 Value	1935 Tons	1935 Value	1936 Tons	1936 Value	1937 Tons	1937 Value	1938 Tons	1938 Value	1939 Tons	1939 Value	1940 Tons	1940 Value
Washington	5,735	$283,571	3,878	$197,278	4,807	$245,887	10,466	*$1,134,964	5,944	$674,325	5,429	$449,092	16,755	$1,519,887
Oregon	11,254	462,088	12,801	436,378	15,904	1,031,489	13,087	*1,117,614	9,349	‡768,272	14,782	1,012,037	33,339	2,544,800
San Francisco	4,069	169,014	1,367	64,726	4,985	535,816	4,799	572,773	1,899	†344,230	1,436	203,161	4,120	524,800
Los Angeles	553	21,431	285	12,072	176	6,495	2,035	304,468	2,199	269,516	2,295	233,112	2,545	339,886
San Diego	27	4,165	25	2,934	.....	.....	495	64,763	316	47,205	232	28,147	199	21,892
Totals	21,638	$940,269	18,356	$713,388	25,872	$1,819,697	30,882	$3,194,582	19,707	$2,103,548	24,174	$1,925,549	56,958	$4,951,199

*Includes $53,475 for paper shipped through Washington Customs District, $7,824 through Oregon Customs District, for which no tonnage was given.

‡Includes $8,401 for paper and paper products shipped through Oregon Customs District for which no tonnage was given.

†Includes $65,587 for paper and paper products shipped through San Francisco Customs District for which no tonnage was given.

Source: U. S. Department of Commerce, Bureau of Foreign and Domestic Commerce.

PACIFIC COAST EXPORTS Converted Products 1940

By Customs Districts

Customs District	Toilet Paper Pounds	Toilet Paper Value	Paper Towels and Napkins Pounds	Paper Towels and Napkins Value	File Folders, Index Cards, Office Forms, Etc. Pounds	File Folders, Index Cards, Office Forms, Etc. Value	Paper Bags Pounds	Paper Bags Value	Boxes & Cartons Pounds	Boxes & Cartons Value	Envelopes Pounds	Envelopes Value	Cash Register and Adding Machines Paper Pounds	Cash Register and Adding Machines Paper Value
Washington	202,515	$17,667	138,088	$ 9,205	26,916	$ 8,272	2,562,263	$189,784	191,958	$ 10,404	5,430	$ 2,185	22,036	$1,773
Oregon	336,448	17,303	186,718	9,887	.....	.....	1,384,538	82,600	.....	.....	.....	.....	2,185	169
San Francisco	103,291	7,635	147,709	16,491	52,069	21,064	342,768	28,019	6,350,638	191,745	16,513	12,298	45,138	5,616
Los Angeles	1,007	74	35,391	1,904	6,064	4,009	314,583	18,412	168,784	31,195	1,190	348	3,600	294
San Diego	76,602	5,856	68,627	6,420	11,970	2,961	215,695	15,951	51,685	3,272	6,906	1,174	496	95
Total	719,863	$48,535	576,533	$43.907	97,019	$36,306	4,819,847	$334,766	6,763,064	$236,616	30,039	$16,005	73,455	$7,947

EXPORTS OF PAPER BOARD FROM PACIFIC COAST PORTS 1934-1940

(Tons of 2,000 lbs.)

BOXBOARD, BRISTOL, OTHER PAPER BOARD

Customs Districts.	1934 Tons	1934 Value	1935 Tons	1935 Value	1936 Tons	1936 Value	1937 Tons	1937 Value	1938 Tons	1938 Value	1939 Tons	1939 Value	1940 Tons	1940 Value
Washington	232	$13,073	192	$14,755	244	$17,550	1,759	$89,347	1,441	$81,328	941	$60,548	2,240	$189,058
Oregon	690	30,638	542	22,829	179	14,200	.....	.....	374	15,106	160	6,076	769	31,346
San Francisco	2,352	101,089	3,127	123,917	3,853	194,086	4,367	201,550	6,329	424,623	4,994	290,967	8,040	551,286
Los Angeles	313	15,023	69	6,452	57	7,577	233	23,055	168	28,979	445	27,221	2,765	145,335
San Diego	5	542	2	156	.....	.....	32	3,006	78	8,400	9	1,621	3	338
Totals	3,592	$160,365	3,932	$168,109	4,333	$233,413	6,391	$316,958	8,390	$558,436	6,549	$386,433	13,817	$917,363

Source: U. S. Department of Commerce, Bureau of Foreign and Domestic Commerce.

During 1940 1,250,218 square feet of paper board, valued at $34,795, passed through Washington Customs District; 1,741,512 square feet of paper board, valued at $65,029, passed through San Francisco Customs District; 1,325,399 square feet of paper board, valued at $23,548 passed through Los Angeles Customs District; 82,315 square feet of paper board, valued at $3,143, passed through San Diego Customs District.

Paper Making Rag Exports Rise in 1940

• Despite the war blockade, which shut off many markets, exports of rags for papermaking registered an increase in volume during the last calendar year over the preceding twelve months although falling slightly in total value. Exports in 1940 reached an aggregate of 13,483 short tons of 2,000 pounds having a declared value of $946,280, comprising 6,219 tons valued at $50 or over per ton for a total value of $776,249, and 7,264 tons valued at less than $50 a ton for a total value of $170,031, according to U. S. Department of Commerce official figures.

These shipments compared with 10,970 short tons valued at $951,574 exported in 1939, and divided 6,549 tons valued at $50 or more a ton for a total value of $839,818, and 4,421 tons valued under $50 a ton for a total value of $111,756.

Excepting 1937 when 18,178 tons were exported, last year's total exports were larger than in any of the previous four years.

Total exports during the last five calendar years, with declared values, follow:

	Tons	Value
1940	13,483	$ 946,280
1939	10,970	951,574
1938	10,922	934,104
1937	18,178	1,601,751
1936	11,727	808,543

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Represented in the Pacific Northwest by
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Alaska's Forests Potential Pulp Source

• The large reserve of pulpwoods, Sitka spruce and Western hemlock, in Southeastern Alaska, are suitable for the production of pulps and of newsprint. These large and accessible stands of timber are described in a booklet entitled "Tongass National Forest Alaska," issued late in 1940 by the United States Department of Agriculture, Forest Service, Alaska Region.

Under the heading, "Timber Resources and Water Power," the booklet says:

• "Everywhere in this region of Alaska trees and underbrush grow in almost tropical density. The forest cover extends from tidewater to about 2,000 feet altitude.

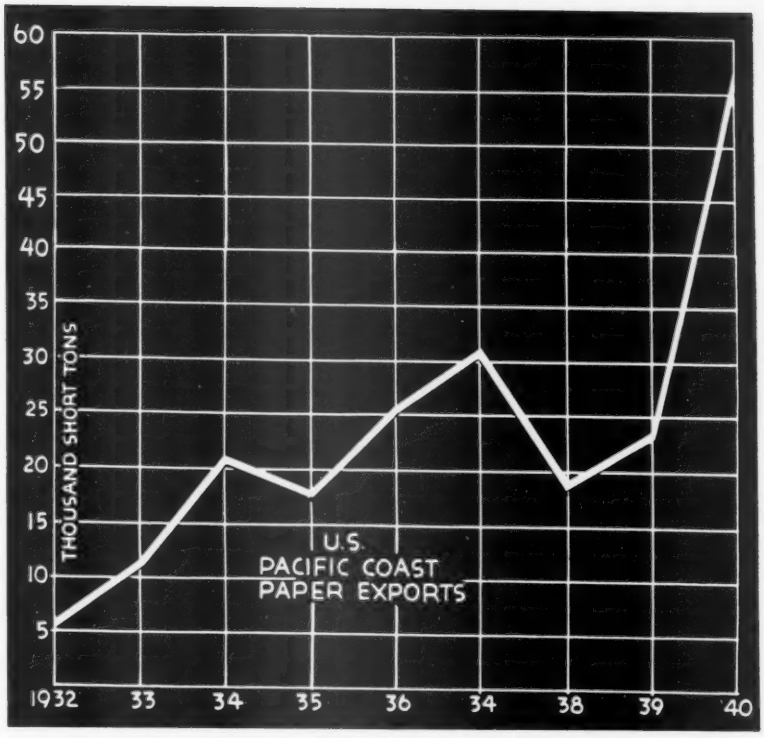
"Because of the sinuous coast the timber is readily available, 75 per cent of that having commercial value estimated to be within 2½ miles of tidewater. The average volume per acre of the commercial timber is around 26,000 board feet; some sawlog tracts average 40,000 to 50,000. On the Tongass Forest the total estimated stand of commercial timber is 78 billion board feet, consisting of about three-fourths Western hemlock and one-fourth Sitka spruce, with some Western red cedar and Alaska cedar. Most of the merchantable trees are 2 to 4 feet in diameter and 90 to 140 feet high.

"Sitka spruce is the most valuable tree of all Alaska and one of the most useful in the United States for general utility purposes. Its fiber is unequaled by that of any other Pacific coast tree for the manufacture of wood pulp. The national forest supplies spruce to meet most of the present sawmill requirements of southeastern Alaska. Western hemlock is used as piling in building wharves and fish traps. It also makes excellent mechanical and sulphite pulps. The cedars, little used at present, are valuable chiefly for shingles, telephone poles, and specialized forms of lumber.

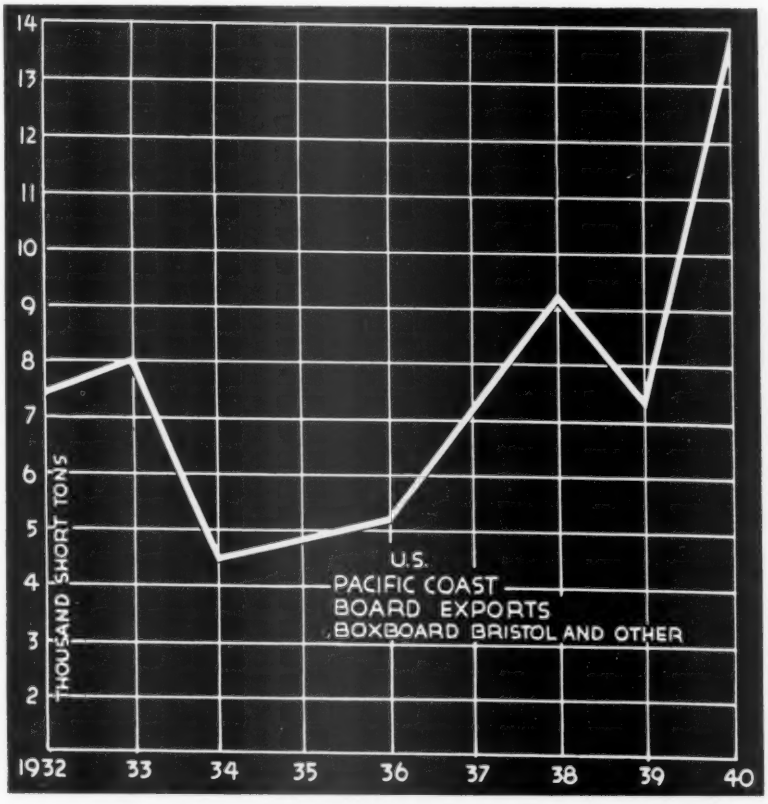
"Timber on the Tongass will be of greatest use when mills are established in the region to manufacture newsprint paper, for which the timber is well-suited. The Forest Service estimates that, under proper management, forests of the region would produce 1½ million or more cords of pulpwood annually in perpetuity; that is the equivalent of a million tons of newsprint, or more than one-fourth the present yearly consumption of the United States. At the present time, however, the timber output is very small.

"Second in importance only to timber in development of a newsprint industry is cheap and abundant power, and water power is avalable on the Tongass in units suitable for single industrial plants. The best sites have capacities of 5,000 to 30,000 horsepower and can be developed economically for year-round use. A typical power site has a high "hanging lake" a short distance inland where water can be stored. Only a short conduit is needed to carry the water to a powerhouse at tidewater, where the power can be used in manufacturing paper, making transmission lines unnecessary. By the use of short transmission lines, power from a number of sites could be concentrated readily at one industrial plant, if so desired.

"A survey of the principal known power sites of this region has been made by the Forest Service, Geological Survey, and Federal Power Commission. The year-round capacity of all the sites covered is about 800,000 horsepower. Fifty power sites with an aggregate capacity of 22,000 horsepower are now in use. All water-power sites are publicly owned and may be leased under the Federal Power Act for periods of as long as 50 years."



Copies of this booklet may be obtained from B. Frank Heintzleman, regional forester, U. S. Forest Service, Juneau, Alaska, or from the United States Government Printing Office, Washington, D. C.



I used to think

MOTHS ATE CLOTHES...

...but they don't

Moths don't eat anything. They just fly, and lay eggs. That's the trouble. Moth eggs hatch into worms or larvae. These moth-worms eat and eat and eat. They think wool's wonderful. And they just *love* silk.

Don't think that beater roll position is responsible for beater roll pressure... because it isn't!

EACH pulp "furnish" is likely to vary—some's thin, some's thicker. Since that is true, common sense proves you can't just set your beater roll position, regardless, and expect every "furnish" to receive uniform pressure. It won't work. Pressure will vary, as pulp density varies. You can't possibly get uniformly processed paper that way.

Each "furnish" must get *exactly* the right "brushing" for the purpose intended. You must have a charted record of the absolutely right roll pressure, to duplicate it perfectly for every batch. Beater roll pressure must be automatically controlled to a definite time and pressure schedule.

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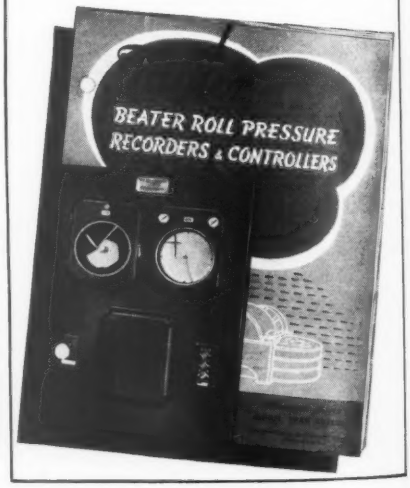


WOOD PULP EXPORTS

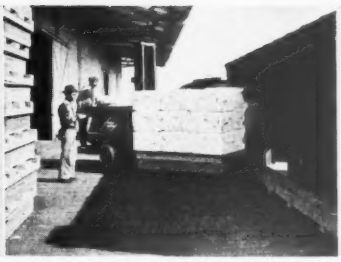
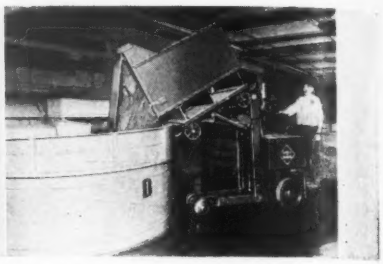
From Pacific Coast Ports
By Countries of Destination
1940

Customs District / From Washington	Bleached Sulphite: Rayon & Special Chemical Grades Tons	Bleached Sulphite: Rayon & Special Chemical Grades Value	Bleached Sulphite: Other Bleached Sulphite Tons	Bleached Sulphite: Other Bleached Sulphite Value	Unbleached Sulphite Tons	Unbleached Sulphite Value	Unbleached Sulphate (Kraft) Tons	Unbleached Sulphate (Kraft) Value	All Others Tons	All Others Value	Total Tons	Total Value
To Belgium	220	$ 8,505	.....	.....	.....	.....	.....	.....	.....	.....	220	$ 8,505
France	2,885	184,884	1,711	$ 101,426	1,228	$ 54,948	.....	.....	.....	.....	5,824	341,258
Netherlands	.....	.....	841	44,593	.....	.....	.....	.....	.....	.....	841	44,593
Portugal	12	668	.....	.....	.....	.....	.....	.....	.....	.....	12	668
United Kingdom	6,393	422,976	19,241	1,187,939	16,703	903,115	778	40,578	338	22,815	43,453	2,577,423
Canada	488	25,450	143	8,447	.....	.....	.....	.....	1,048	24,999	1,679	58,896
Mexico	.....	.....	1,247	74,394	2,517	115,784	3,630	225,892	7,040	468,157	14,434	884,227
Cuba	.....	.....	50	2,878	.....	.....	.....	.....	.....	.....	50	2,878
Argentina	1,696	114,749	3,338	217,546	3,239	180,748	.....	.....	672	41,835	8,945	554,878
Brazil	50	4,530	6,886	396,782	4,655	235,195	1,625	100,522	2,174	148,586	15,390	885,615
Chile	23	2,043	2,136	125,446	2,855	184,960	334	21,573	335	20,800	5,683	354,822
Peru	.....	.....	.....	.....	991	52,371	224	13,443	.....	.....	1,215	65,814
Uruguay	.....	.....	.....	.....	222	14,918	.....	.....	.....	.....	222	14,918
British India	.....	.....	.....	.....	312	10,226	.....	.....	.....	.....	312	10,226
China	.....	.....	1,310	80,855	510	25,500	.....	.....	350	21,643	2,170	127,998
Netherland's Indies	.....	.....	.....	.....	113	5,734	.....	.....	.....	.....	113	5,734
Japan	58,792	4,574,946	2,357	152,884	6,613	362,013	4,515	268,425	140	9,178	72,417	5,367,446
Philippine Islands	.....	.....	350	25,404	.....	.....	201	14,266	.....	.....	551	39,670
Australia	.....	.....	4,499	283,866	558	30,302	5,704	251,866	.....	.....	10,761	566,034
New Zealand	.....	.....	11	753	.....	.....	736	48,712	564	43,189	1,311	92,654
Africa	.....	.....	901	57,486	950	62,032	.....	.....	550	41,942	2,401	161,460
Total	**70,559**	**$5,338,751**	**45,021**	**$2,760,699**	**41,466**	**$2,237,846**	**17,747**	**$ 985,277**	**13,211**	**$ 843,144**	**188,004**	**$12,165,717**
From Oregon												
To United Kingdom	.....	.....	3,335	226,247	2,924	204,960	.....	.....	.....	.....	6,259	431,207
Mexico	.....	.....	.....	.....	700	35,189	.....	.....	.....	.....	700	35,189
Argentina	.....	.....	51	3,996	208	13,339	.....	.....	.....	.....	259	17,335
Brazil	.....	.....	1,434	94,136	3,263	153,123	.....	.....	.....	.....	4,697	247,259
Chile	.....	.....	.....	.....	276	14,115	.....	.....	.....	.....	276	14,115
Peru	.....	.....	220	15,771	101	6,322	.....	.....	.....	.....	321	22,093
Uruguay	.....	.....	117	8,500	.....	.....	.....	.....	.....	.....	117	8,500
British India	.....	.....	.....	.....	.....	.....	.....	.....	839	33,187	839	33,187
Japan	.....	.....	.....	.....	1,200	72,750	.....	.....	.....	.....	1,200	72,750
Australia	.....	.....	490	41,650	.....	.....	.....	.....	.....	.....	490	41,650
Africa	.....	.....	.....	.....	1,169	75,727	.....	.....	.....	.....	1,169	75,727
Total	.....	.....	**5,647**	**$ 390,300**	**9,841**	**$ 575,525**	.....	.....	**839**	**$ 33,187**	**16,327**	**$ 999,012**
From San Francisco												
To United Kingdom	.....	.....	.....	.....	460	27,113	.....	.....	.....	.....	460	27,113
British India	266	14,169	903	67,695	514	16,843	.....	.....	.....	.....	1,683	98,707
China	.....	.....	.....	.....	965	59,154	.....	.....	.....	.....	965	59,154
Japan	.....	.....	.....	.....	300	15,000	.....	.....	.....	.....	300	15,000
Philippine Islands	.....	.....	.....	.....	149	8,550	.....	.....	.....	.....	149	8,550
Total	**266**	**$ 14,169**	**903**	**$ 67,695**	**2,388**	**$ 126,660**	.....	.....	.....	.....	**3,557**	**$ 208,524**
GRAND TOTAL	**70,825**	**$5,352,920**	**51,571**	**$3,218,694**	**53,695**	**$2,940,031**	**17,747**	**$ 985,277**	**14,050**	**$ 876,331**	**207,888**	**$13,373,253**

Note: In 1939 for the first time the U. S. Customs segregated the rayon and special chemical grades of bleached sulphite from the bleached sulphite for paper and also established a separate classification for unbleached sulphate which in previous years had been included under "Other Pulp." Exports from Pacific Coast ports under "Other Pulp" are very largely bleached sulphate.

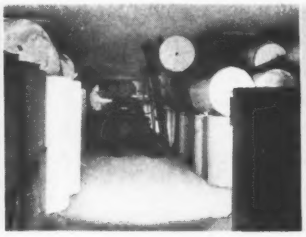
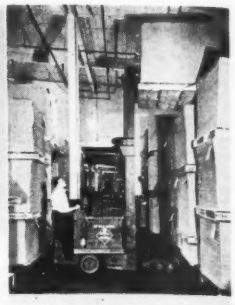
No exports of wood pulp through Los Angeles Customs District during 1940.

Source: U. S. Department of Commerce Bureau of Foreign & Domestic Commerce.

AN INQUIRY—*Dear Elwell-Parker:*—In handling Pulp (or Paper, or Paper Products) at our Mill, we face this problem * * * * * * * * * * * * * * We understand you have had a great deal of experience in the Paper Industry. What equipment do you suggest; and what would it do to reduce our costs?

Very truly yours,
John J. Progress, *Superintendent.*

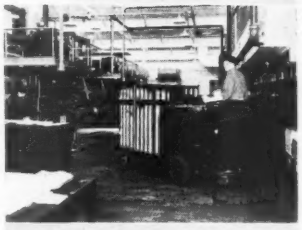
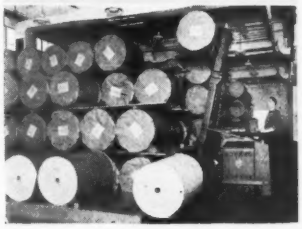
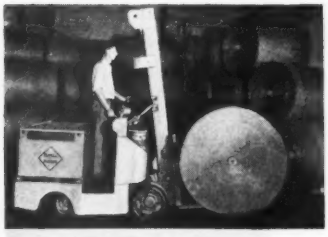
AND THE ANSWER—*Dear Mr. Mill Superintendent:* One of the most satisfactory things that Elwell-Parker has been able to do in its 34 years' experience has been helping the Paper Industry to grow and make money.

By installing Elwell-Parkers in pulp and paper mills, owners have moved larger unit loads faster and more economically than before.

In newsprint plants, large Elwell-Parker Trucks have increased load-capacity, enabling manufacturers to produce wider sheets and manipulate heavy rolls with speed, ease and safety.

Today there is scarcely one load-handling operation in pulp and paper mills, the paper-products industries, newspaper and magazine publishing plants, or large printing plants and binderies, which Elwell-Parker Trucks and Cranes are not performing with speed and economy.

As evidence, we call your attention to pictures showing a few of the hundreds of important jobs that Elwell-Parkers are performing at a profit throughout your industry.

YOUR MOVE NEXT!

You, too, want first the benefit of Elwell-Parker's long, sound experience building Trucks and Cranes for the Paper Industry; and second the modern equipment that Elwell-Parker today is supplying to the Industry nation-wide. Trained Elwell-Parker Representatives will plan a System for *you* that will quickly pay for itself through reduced costs of handling your loads.

It's *your* move next! The Elwell-Parker Electric Company, 4231 St. Clair Avenue, Cleveland, Ohio.

COLBY STEEL & ENGINEERING CO.
425-6 Central Building • ELliot 5722
Seattle, Washington

ELWELL-PARKER *Power Industrial* TRUCKS

ESTABLISHED 1893 • BUILDING POWER INDUSTRIAL TRUCKS SINCE 1906

PAPER EXPORTS
From Pacific Coast Ports
By Countries of Destination
1940
(Tons—2,000 Pounds)

Customs District— From Washintgon to	Newsprint Tons	Newsprint Value	Book Paper Not Coated Tons	Book Paper Not Coated Value	Greaseproof and Waterproof Tons	Greaseproof and Waterproof Value	Wrapping Tons	Wrapping Value	Kraft Tons	Kraft Value	Tissue and Crepe Tons	Tissue and Crepe Value
United Kingdom	81	$ 431	22	2,759			111	15,904				
Canada	3	155	305	39,263	13	3,431	69	13,739	32	2,867	2	938
Costa Rica							2	180				
Guatemala			27	2,884			1	84				
Honduras			28	4,256								
Nicaragua	2	142	15	1,816								
Panama			6	940					2	100		
Salvador			29	3,561								
British Barbados	148	7,087										
Jamaica	278	13,196										
Cuba			500	58,585								
Netherland W Ind.			61	747								
Argentina			161	19,620			60	54,108				
Bolivia			3	409								
Chile			3	315								
Colombia			139	16,204			614	58,359	506	36,381		
Ecuador			67	6,839								
British Guiana	59	2,869										
Other West Indies							8	420				
Peru			91	10,451	3	798						
Venezuela			150	15,908								
British India	521	36,534										
British Malaya	17	1,125	61	9,010								
China	3,016	173,765	1,847	257,017	5	1,207	1,537	156,753				
Netherlands Indies	765	43,940	51	6,018			338	30,536	70	7,048		
Hong Kong	2,071	107,188	146	19,412			149	16,590				
Japan							126	19,627	35	4,724		
Kwantung									13	1,510		
Philippine Islands	134	8,640	1,030	111,129	90	18,195	179	17,030	10	1,179		
Siam			12	1,400			5	567				
Australia			11	1,317								
New Zealand			523	47,433								
Africa	252	11,876	26	3,086					114	10,285		
Total	**7,347**	**$ 406,948**	**5,314**	**$640,379**	**111**	**$ 23,631**	**3,199**	**$ 383,897**	**782**	**$ 64,094**	**2**	**$ 938**
From Oregon to												
United Kingdom							120	17,553				
Costa Rica							180	19,271				
Guatemala							1	107				
Honduras							3	288				
Nicaragua												
Panama							334	35,756	1	89		
Salvador							8	545				
British Barbados												
Jamaica	18	1,107					118	5,208				
Trinidad							60	5,188				
Cuba	5	489					820	78,879				
Dominion Republic							285	31,091				
Haiti							38	4,185				
Netherland W Ind.							169	18,864	9	6,150		
Argentina	11	736					461	57,404			154	23,319
Brazil											383	51,379
Boliva							3	507				
Colombia	23	1,584					1,626	152,030				
Ecuador	2	188					285	30,895				
British Guiana							5	750				
Surinam							7	804				
Paraguay							3	863				
Peru							298	28,883				
Uruguay							53	6,722				
Venezuela							10	2,231			1	113
British India	2,680	156,241					608	62,800				
British Malaya	274	15,976			20	4,063	300	34,470				
Ceylon	115	6,449			15	3,795			1	250		
China	704	32,520					449	51,620				
Japan							34	4,631				
Netherlands Indies	796	56,825	8	978			55	6,108				
French Indo-China							8	829				
Hong Kong	1,083	59,836					804	88,199	17	2,000		
Iraq							12	1,364				
Palestine							46	4,027			44	2,679
Philippine Islands	10,449	575,650			49	7,792	5,289	381,546	1,004	83,058		
Siam							12	1,674				
Australia							527	85,081				
British Oceania							2	224				
Africa	198	12,295					1,912	186,521			330	32,055
Total	**16,358**	**$ 919,896**	**8**	**$ 978**	**84**	**$ 15,650**	**14,945**	**$1,407,118**	**1,032**	**$ 91,547**	**912**	**$109,545**

PAPER EXPORTS—(Continued)

Customs District—	Newsprint Tons	Newsprint Value	Book Paper Not Coated Tons	Book Paper Not Coated Value	Greaseproof and Waterproof Tons	Greaseproof and Waterproof Value	Wrapping Tons	Wrapping Value	Kraft Tons	Kraft Value	Tissue and Crepe Tons	Tissue and Crepe Value
From S. Francisco to												
United Kingdom	----	----	----	----	----	----	----	----	----	----	----	----
Canada	*805	21	----	----	----	----	*190	21	----	----	----	----
Costa Rica	----	----	----	----	1	290	160	17,366	----	----	*420	102
Guatemala	----	----	----	----	*82	15	----	----	*1,232	83	----	----
Honduras	----	----	----	----	----	----	----	----	----	----	----	----
Nicaragua	----	----	*158	35	----	----	4	273	8	838	----	----
Salvador	----	----	5	904	*749	405	3	481	9	865	*396	72
Mexico	*1,000	24	----	----	----	----	----	----	----	----	----	----
British Barbadas	1	98	----	----	----	----	26	1,325	----	----	----	----
Cuba	30	2,428	126	15,841	----	----	271	31,295	----	----	----	----
Netherland W Ind.	2	95	----	----	*30	23	13	1,441	----	----	*800	64
Argentina	----	----	----	----	3	555	----	----	----	----	----	----
Brazil	----	----	----	----	----	----	12	1,610	----	----	----	----
Columbia	29	2,094	----	----	----	----	252	25,556	----	----	----	----
Ecuador	2	180	----	----	----	----	188	16,991	1	140	----	----
Peru	----	----	----	----	----	----	16	2,409	----	----	----	----
Uruguay	----	----	----	----	----	----	1	351	----	----	----	----
British India	51	3,020	----	----	16	1,797	7	982	42	4,868	----	----
British Malaya	----	----	----	----	*50	5	*100	24	1	134	----	----
Ceylon	11	584	----	----	----	----	----	----	----	----	2	512
China	----	----	*980	256	1	434	*750	81	62	8,692	47	7,127
Japan	1	90	15	2,585	----	----	170	15,701	162	15,883	----	----
Netherlands Indies	----	----	----	----	*42	13	----	----	----	----	*37	9
French Indo-China	----	----	----	----	13	3,374	----	----	----	----	----	----
Hong Kong	----	----	44	20,650	1	688	8	1,080	15	2,664	1	325
Kwantung	----	----	----	----	----	----	439	39,136	----	----	----	----
Palestine	----	----	2	525	----	----	----	----	----	----	----	----
Philippine Islands	232	12,716	3	416	6	1,971	28	6,800	52	13,006	31	8,661
Siam	----	----	----	----	*20	2	----	----	----	----	*194	48
Australia	----	----	2	450	5	1,907	238	48,371	----	----	12	15,009
French Oceania	2	206	1	156	2	361	490	52,640	*100	7	*319	100
Africa	----	----	----	----	----	----	4	616	----	----	----	----
New Zealand	----	----	----	----	*211	23	683	87,080	----	----	----	----
British Oceania	----	----	----	----	1	259	*10	2	----	----	----	----
Others	----	----	----	----	*250	24	2	186	----	----	----	----
Total	**361**	**$ 21,556**	**198**	**$ 41,818**	**50**	**$ 12,146**	**3,015**	**$ 351,818**	**352**	**$ 47,180**	**94**	**$ 32,029**
From Los Angeles to												
United Kingdom	----	----	----	----	----	----	89	11,670	----	----	57	7,351
Canada	----	----	----	----	2	352	*404	58	----	----	*162	30
Honduras	----	----	----	----	----	----	1	83	----	----	12	1,814
Nicaragua	----	----	----	----	----	----	2	252	----	----	----	----
Panama	----	----	5	956	----	----	45	4,842	----	----	1	173
Salvador	----	----	----	----	----	----	----	----	1	102	1	190
Mexico	----	----	2	256	----	----	----	----	----	----	----	----
British Barbados	----	----	----	----	----	----	----	----	----	----	----	----
Cuba	13	949	150	19,515	----	----	645	36,704	----	----	184	32,073
Argentina	----	----	----	----	----	----	2	459	----	----	59	9,521
Brazil	----	----	----	----	----	----	----	----	----	----	72	11,421
Columbia	----	----	4	457	*49	79	*83	11	----	----	12	2,234
Ecuador	----	----	----	----	----	----	26	2,136	----	----	----	----
Peru	----	----	2	296	----	----	----	----	----	----	----	----
Uruguay	----	----	----	----	----	----	*521	73	----	----	----	----
Venezuela	8	415	22	2,088	----	----	----	----	----	----	----	----
British India	----	----	----	----	----	----	4	1,235	----	----	----	----
Ceylon	----	----	----	----	----	----	----	----	----	----	12	2,172
China	----	----	----	----	----	----	----	----	----	----	724	97,019
Japan	----	----	----	----	*10	3	----	----	----	----	----	----
Philippine Islands	----	----	2	281	----	----	8	1,000	86	1,363	4	2,744
Australia	----	----	----	----	27	6,903	100	25,136	----	----	78	11,842
New Zealand	----	----	----	----	----	----	47	6,487	----	----	----	----
DominicanRepublic	----	----	----	----	----	----	98	10,201	----	----	----	----
Curacoa	----	----	----	----	----	----	12	1,706	----	----	----	----
Jamaica	----	----	----	----	----	----	3	484	----	----	30	5,489
Trinidad	----	----	----	----	----	----	----	----	----	----	9	1,585
Africa	----	----	----	----	----	----	----	----	----	----	6	1,160
Other	----	----	----	----	----	----	----	----	----	----	6	1,116
Total	**21**	**$ 1,364**	**187**	**$ 23,849**	**29**	**$ 7,337**	**477**	**$ 102,537**	**87**	**$ 1,465**	**1,267**	**$187,979**
From San Diego to												
Mexico	52	4,654	6	895	2	457	134	15,049	13	373	3	364
GRAND TOTAL	**24,139**	**$1,354,418**	**5,713**	**$707,919**	**276**	**$ 59,221**	**21,770**	**$2,260,419**	**2,266**	**$204,659**	**2,278**	**$330,855**

*Lbs.

Gears
"Gear Products From Gear Specialists"
Skilled craftsmen working with modern tools and equipment guided by the specialized experience gained during more than fifty years of designing gears and drives for industry is your assurance that the particular requirements in any pulp and paper mill application will be fully met by PACIFIC-WESTERN. Three modern plants offer prompt, reliable service.
Give us the facts and our engineers will select the proper gear unit for your drive.
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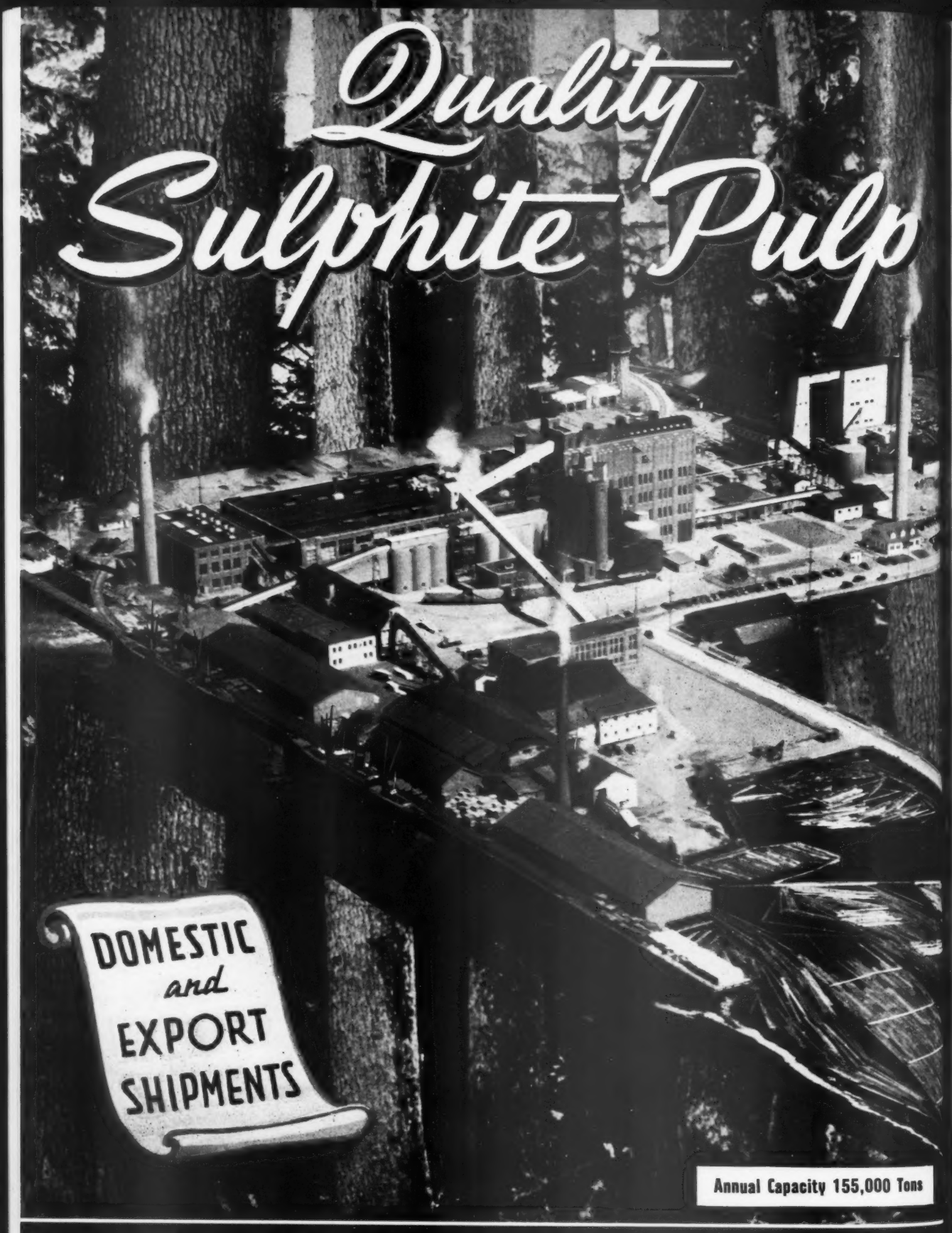


PUGET SOUND PULP & TIMBER C

Bellinaham Washinaton

A Report On Canada's Forests

IN the preliminary report of the Census of Industry, Forestry Branch for 1939, issued in May 1941 by the Dominion Bureau of Statistics, considerable data is given on Canada's forests, production, growth, value, total drain, etc.

The most important forest product in Canada in 1939 was pulpwood with a value of $58,302,668. Logs and bolts with a total value of $55,685,197 were second. Third was firewood with a value of $33,058,240.

It is estimated that the total forest production in 1939 involved the cutting of 2,824,837,000 cubic feet of standing timber. "This," says the report, "constitutes only the depletion for use and to it must be added the volume of material destroyed by fire, which during the last ten years has averaged 304,000,000 cubic feet of merchantable timber and young growth of various ages estimated to be the equivalent of 264,000,000 cubic feet. Insects, fungi and windfall destroy annually at least 700,000,000 cubic feet so that the drain on our forest resources in 1939 was approximately 4,092,837,000 cubic feet."

Forest Resources

● The latest available estimate places Canada's forest resources at 273,656 million cubic feet of standing timber made up of 425,250 million feet board measure of sawn lumber and 1,746,639 thousand cords of plupwood, ties, poles and other small materials.

"Estimating the probable duration of our supply of forest products is not a matter of simple arithmetic," says the report. "The rate of utilization is far from constant. It tends to increase with the discovery of new uses for wood, the increase in our population and the increase in demand for forest products from other countries whose supplies have been reduced to a greater extent than our own. The rate of destruction from fires and other agencies is also very uncertain. The fire hazard tends to increase with the increase in population and the extention of settlement unless measures are taken to prevent this tendency. During the last few years forest fire damage in Canada has been materially reduced owing to favorable weather conditions and improved methods of detecting and fighting forest fires. Credit is also due to the general public for a greater measure of cooperation in the prevention of fires and to the various organizations which have carried on educational campaigns for forest conservation.

Increment Better Than Realized

● "With about 600,000 square miles of accessible timber in growing condition, an average annual increment of 10 to 11 cubic feet per acre would be quite possible under forest management and would cover the present annual average depletion. In view of the destruction of young growth which occurs and the deterioration of the forests and the soil caused by repeated fires and by insect and fungus damage, there is little evidence that this increment is being produced at the present time throughout Canada, although particular areas are producing in excess of this quantity.

Extensive reproduction and rate of growth studies being conducted by the Dominion and Provincial Forest Service indicate that the increment is greater than previously estimated.

"The use of substitutes for wood may tend to reduce consumption but this is usually exaggerated as a factor in forest conservation. The increasing scarcity of wood will result in increasing prices which will tend to limit consumption.

"It is now a profitable investment to plant trees in Canada under certain conditions and the regeneration and management of forest lands will become increasingly profitable as supplies decrease and prices advance, but before this regeneration and management can possibly result in forest crops sufficient for our needs we will pass through a period of lean years whose duration and intensity will depend entirely upon how soon and how effectively we apply scientific management to our remaining forests. . . .

CANADA
Wood Pulp Exports

(Tons of 2,000 lbs.)

Year—	Chemical Pulp Tons	Chemical Pulp Value	Mechanical Pulp Tons	Mechanical Pulp Value	Total, All Pulp Net Tons	Total, All Pulp Value
1940	864,406	$54,665,080	204,084	$6,265,069	1,068,490	$60,930,149
1939	536,864	26,910,425	168,651	4,090,177	705,515	31,000,602
1938	429,832	24,816,491	124,202	2,914,247	554,034	27,730,738
1937	703,915	37,670,179	166,796	4,145,552	870,711	41,815,121
1936	620,977	28,405,644	133,512	2,841,051	754,489	31,246,695
1935	538,419	24,993,785	124,049	2,631,945	662,468	27,625,730
1934	486,990	22,716,942	118,645	2,727,902	605,635	25,444,844
1933	476,358	20,666,614	132,151	2,688,023	608,509	23,354,637
1932	336,063	16,367,976	116,229	2,562,080	452,292	18,930,065
1931	457,435	25,450,476	165,096	4,606,167	622,531	30,056,643
1930	551,413	33,092,807	208,759	5,967,172	760,172	39,059,979
1929	626,378	37,670,383	209,331	5,906,638	835,709	43,577,021
1928	660,136	40,068,703	203,670	5,546,120	863,806	45,614,323
1927	618,324	39,234,577	260,831	7,761,464	879,155	46,996,011
1926	621,004	40,571,304	382,077	11,505,818	1,003,081	52,077,122
1925	599,466	37,358,632	360,265	10,573,273	959,671	47,931,905
1924	528,279	32,326,943	253699	7,916,029	781,978	40,242,972
1923	.....	.....	.....	.....	875,358	37,027,496
1922	.....	.....	.....	.....	818,246	41,037,849
1921	.....	.....	.....	.....	527,222	33,133,675
1920	.....	.....	.....	.....	819,985	76,563,978
1919	.....	.....	.....	.....	709,134	37,184,764
1918	.....	.....	.....	.....	583,911	33,359,922

Dyes for granite papers

● Granite papers find widest use in fine stationery, cover and blotting papers and "mist gray" container board.

Graniting fibers are generally unbleached sulfite, unbleached kraft or cotton rags. They are dyed with—

Selected Direct Colors
—having good affinity for the fiber and showing minimum bleeding.

Sulfur Colors
—practically free from bleeding.

Most granite fibers used in mist gray container boards are dyed with sulfur blacks. Direct colors have a tendency to bleed more on unbleached than on bleached stock.

The Du Pont dyes listed will produce most shades of colored fibers with the least bleeding effect. Careful chemical supervision is maintained throughout manufacture, and products of uniform quality can be relied upon.

PONTAMINE*	**Fast Yellow BBL**
PONTAMINE	**Fast Orange MRL**
PONTAMINE	**Fast Scarlet 4BS**
PONTAMINE	**Fast Red 8BNL (Pat.)**
PONTAMINE	**Fast Blue 4GL**
PONTAMINE	**Fast Blue 5RL**
PONTAMINE	**Sky Blue 6BX (aftertreated)**
PONTAMINE	**Brilliant Violet B**
PONTAMINE	**Black E**
SULFOGENE*	**Carbon MCF Grains (Pat.)**
SULFOGENE	**Carbon HCF Grains (Pat.)**

*REG. U. S. PAT. OFF.

E. I. du Pont de Nemours & Co. (Inc.)
Organic Chemicals Dept., Dyestuffs Div.,
Wilmington, Delaware

DU PONT DYESTUFFS

Quebec Biggest Timber Producer

● "The province of Quebec heads the list for volume of forest production and leads in quantity production of pulpwood, firewood and fence rails. British Columbia is the second most important province for volume production, coming first in logs and poles. . . .

"The Forestry Branch of the Dominion Bureau of Statistics circularizes each year over 500 of the more important concerns carrying on logging operations regularly in Canada and conducts other special inquiries in this field. The firms so covered produce over a third of the total cut in each year.

"The result of these investigations shows that the marketing of a thousand cubic feet of standing timber involves an average capital investment of about $70, and average expenditure of $12 on materials and supplies, an average employment of 8 man-days and an average wage and salary distribution of $28. Applying these figures to the 1939 total estimates cut of over 23,825 million cubic feet gives a total capital investment of about $198 million, a total expenditure of about $32 million on materials, 22,600,000 man-days of employment and a total payroll of $79 million.

B. C. Most Efficient Producer

"Operations in the woods are carried on more or less uniformly throughout the year in British Columbia and the average logging season is about 200 days. On account of the large size of the material and the greater use of logging machinery the production per man per day is higher than elsewhere in Canada and averages about 225 cubic feet of standing timber. At this rate, the industry in this province would have given employment in 1939 to at least 14,988 individuals throughout the season.

"The logging season elsewhere in Canada averages only about 100 days and the average production per man per day is about 82 cubic feet of standing timber. This would mean employment during the logging season for at least 262,242 individuals. The total for the country as a whole would be more than 277,240 persons employed during the logging seasons in the different districts where this work is carried on. . . .

"Out of a total of 2,825 million cubic feet of standing timber cut in Canada in 1939 about 90 per cent was retained in the country for immediate use or as raw material for further manufacture in some Canadian industry, and 10 per cent was exported in a more or less unmanufactured form.

"In 1939 the total value of capital invested in the wood and paper group of industries was $960,804,672. The employees numbered 144,782 and were paid $165,287,455 in wages and salaries. The net value of production was $303,662,441 and the gross value $579,892,183.

22% of Pulpwood Exported

● "About 22 per cent of the pulpwood cut was exported before being manufactured into pulp, but 86 per cent of this exported material was rossed or barked pulpwood whose value was considerably increased by this preparation before exportation.

"Seventy-eight per cent of our total cut of pulpwood was used as the principal raw material in the pulp and paper industry, one of the most important manufacturing industries in Canada. In pulpmaking, the first stage in this industry, the value added to the raw pulpwood by manufacture amounted to over $50,000,000 in 1939. Seventeen per cent of this pulp was exported and the remainder was made into paper in Canada with a value added to the pulp of almost $103,000,000. The value added to pulpwood by manufacture in the pulp and paper industry as a whole was over $124,000.000."

CANADA PULP PRODUCTION

(Tons of 2,000 lbs.)

	Mechanical Tons	Sulphite Tons	Sulphate Tons	Total Tons
1920	1,090,114	654,273	188,487	1,922,774
1921	931,560	476,929	131,337	1,539,826
1922	1,241,185	678,878	217,862	2,137,925
1923	1,449,106	749,668	224,812	2,413,586
1924	1,427,782	768,035	218,207	2,414,024
1925	1,621,917	842,785	242,207	2,706,909
1926	1,901,268	995,203	256,074	3,152,545
1927	1,922,124	1,016,060	262,512	3,200,696
1928	2,127,699	1,117,227	256,969	3,501,895
1929	2,420,774	1,236,232	250,104	3,907,110
1930	2,283,130	1,076,804	188,253	3,548,187
1931	2,016,480	941,586	145,156	3,103,222
1932	1,696,021	941,579	144,367	2,781,967
1933	1,859,049	937,313	182,988	2,979,350
1934	2,340,441	1,020,493	205,980	3,566,914
1935	2,458,000	1,025.000	206,000	3,689,000
1936	2,910,338	1,168,927	273,494	4,352,759
1937	3,308,517	1,373,232	312,741	4,994,490
1938	2,650,000	925,000	258,000	3,833,000
1939	2,738,011	1,028,820	292,066	4,058,897
1940	3,150,000	1,375,000	362,000	4,887,000

Above totals are of mechanical, sulphite and sulphate only and do not include soda, screenings or miscellaneous grades.

Norway's Exports To Germany

● In 1940 Norway is reported to have exported to Germany 178,000 tons of cellulose, 100,000 tons of wood pulp, 75,000 tons of paper and one million cubic meters of pulp wood.

It is assumed that the tons are metric tons. Cellulose probably refers to wood cellulose prepared for use as fodder.

WOOD PULP EXPORTS FROM CANADA 1939-1940

(Tons of 2,000 lbs.)

Country	1939 Tons	1939 Value	1940 Tons	1940 Value
United States	606,583	$26,836,718	825,262	$46,576,654
United Kingdom	72,430	2,712,942	176,214	9,966,249
Japan	(Included in All Others)		24,755	1,959,402
All Others	26,490	1,450,942	42,259	2,387,246
Total	705,503	$31,000,602	1,068,490	$60,889,551

WOOD PULP EXPORTS FROM CANADA By Grades 1939-1940

(Tons of 2,00 lbs.)

Grade	1939 Tons	1939 Value	1940 Tons	1940 Value
Bleached Sulphite	299,685	$16,697,177	428,029	$29,837,778
Unbleached Sulphite	109,159	3,954,980	280,767	14,832,194
Sulphate	108,868	5,741,152	136,049	9,161,716
Other	9,059	408,531	12,330	716,514
Groundwood	168,651	4,090,177	204,084	6,265,069
Screenings	10,090	107,585	7,230	116,878
Totals	705,512	$31,000,602	1,068,489	$60,930,149

Consumption of Rayon Pulp Sets New Record in 1940

American rayon manufacturers consume 178,000 tons of wood pulp in 1940, an increase of 33,000 tons or 22.8% over the 1939 consumption—Rayon production established new records—Staple Fiber production up 58% over 1939 and 135% over 1938.

THE RAYON and staple fiber production in the United States moves steadily ahead and as a result more and more dissolving wood pulp is consumed by the industry.

According to the estimate of the Rayon Organon 178,000 short tons of wood pulp was used by the rayon and staple fiber makers in 1940. This was a gain of 33,000 tons or 22.8 per cent over the 1939 consumption of 145,000 tons. Compared with the previous record consumption year of 1937 when 132,000 tons of wood pulp were used, the 1940 consumption was 46,000 tons or 35 per cent greater.

The relative proportion of wood pulp and cotton linter pulp used in the rayon industry remained static at 75 to 25 per cent the same as it was in 1937, 1938 and 1939. However, the consumption of linter pulp rose to 60,000 tons in 1940, 7,000 tons above the 1939 consumption of 53,000 tons and 20,000 tons up from the 1938 usage.

The United States Pulp Producers Association states that the producing capacity of bleached sulphite pulp of rayon grades in 1939 was 335,556 short tons or 19 per cent of the total bleached sulphite producing capacity of 1,760,813 short tons reported in 1940. Apparent consumption, production plus imports, less exports) was 287,241 tons in 1940. This was 16 per cent of the total bleached sulphite pulp consumption of 1,746,459 tons. The figure 287,241 tons is not comparable with the 178,000 tons reported by the Rayon Organon as being consumed by the rayon industry, for the former includes other consuming industries than the rayon mills, such as the producers of plastics, lacquers, cellophane and smokeless powder. Stocks on hand at the end of each year are not taken into consideration.

Production of rayon grades of bleached sulphite pulp in the United States in 1940 was 288,500 short tons or 18 per cent of the total bleached sulphite pulp produced in that year. This compares with a production of 159,205 short tons in 1939 or 13 per cent of the total bleached sulphite pulp produced in that year. According to the United States Pulp Producers Association figures the increase in rayon pulp production in 1940 over 1939 was 129,295 tons or 81.2 per cent.

Domestic sales of rayon grades of bleached sulphite pulp were reported to be 157,700 tons in 1940 against 106,760 tons in 1939, a gain of 50,940 tons or 47.7 per cent.

Imports of the rayon grades, all from Canada, amounted to 113,945 tons in 1940, making up 32 per cent of the bleached sulphite pulp imported as compared with 18.5 per cent in 1939. The imports in 1940 were 25,893 tons or 29.3 per cent higher than the 88,052 tons imported in 1939.

Rayon pulp exports in 1940 of 115,204 short tons were 53 per cent of all bleached sulphite pulps exports as compared with 67.5 per cent in 1939. The 1940 exports were 66,972 tons or 138 per cent higher than the 48,232 tons exported in 1939.

New Records Again in 1940

"In 1940, the United States rayon industry broke all previous production records," said the Rayon Organon, published by the Textile Economics Bureau. "Total filament yarn and staple fiber production last year reached a new all-time high total of 471,700,000 pounds which was 24 per cent greater than the 379,939,000 pounds produced during the previous record year of 1939."

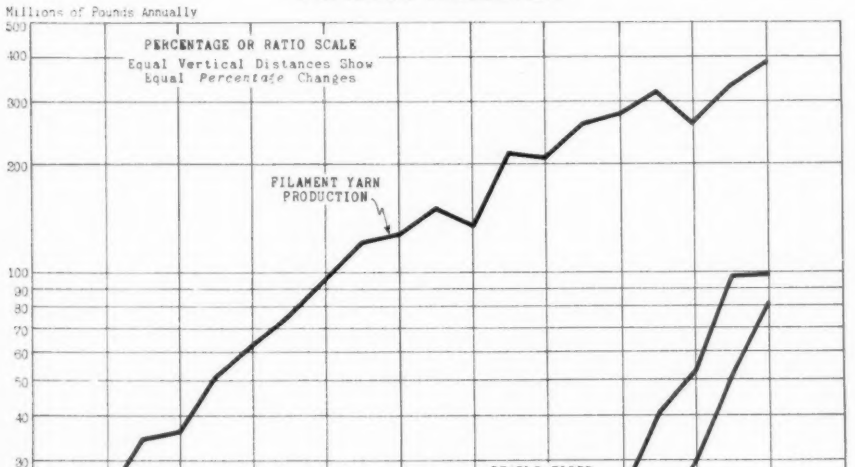
"New production highs were established by both the filament yarn and staple fiber branches of the industry, rayon filament yarn production in 1940 at 390,072,000 pounds, being 19 per cent greater than the previous record year of 1939. New high levels of rayon yarn production also were achieved by the several processes of manufacture. The 1940 production of rayon staple fiber at 81,098,000 pounds was 58 per cent above the previous peak year of 1939.

"In consumption, too, the rayon industry set a new high in 1940. Thus the 1940 consumption of rayon totaled 487,800,000 pounds, an increase of 6 per cent over the previous record of 458,465,000 pounds consumed in 1939.

"Filament rayon yarn consumption in 1940 at 388,729,000 pounds exceeded the former record made in 1939 by 8 per cent. Both the viscose-cuprammonium and the acetate branches of the industry reached new high shipment levels.

"Rayon staple fibre available for consumption (domestic production plus imports for consumption) totaled 99,100,000 pounds in 1940, a figure essentially equal to the production of 98,717,000 pounds set in 1939. However, these simple totals do not tell the full story. First, there was a significant increase of 58 per cent in staple fiber production from 51,314,000 pounds in 1939 to 81,098,000 pounds in 1940. Second, there was a drastic decline of 62 per cent in staple fiber imports from 1939 to 1940, the respective figures being 47,403,000 and 18,000,000 pounds. A third factor resulted from the war scare purchases of staple fiber by yarn spinners in the closing months of 1940. These purchases resulted in the building up of spinners' inventories which, in turn, were liquidated in 1940. Thus this staple was actually spun into yarn in 1940, and not in 1939 as the basic figures would indicate."

U.S. RAYON PRODUCTION



From the Rayon Organon.

Courtesy du Pont Company.

"CORDURA" the viscose rayon yarn of exceptional strength was developed a few years ago by the Rayon Department of E. I. du Pont de Nemours & Company and its first major application was in the fabric of heavy-duty bus and truck tires, which outlasted cotton fabric tires several times.

Now "Cordura" is employed in producing stronger dress fabrics such as the rayon marquisette pictured here in a dinner gown in navy with white embroidery trim. "Cordura" is but one example of the constant progress of the rayon industry.

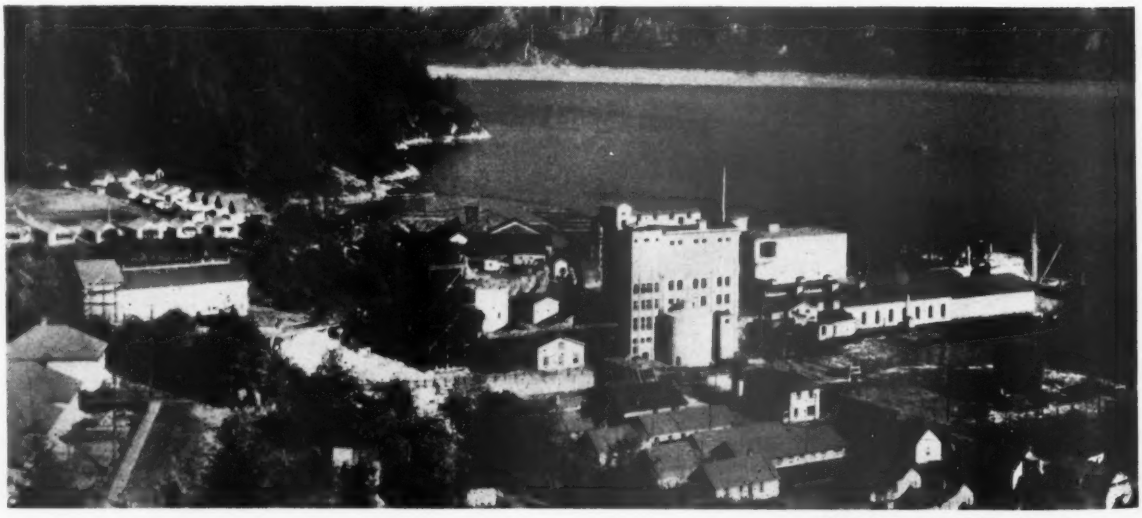
PORT ALICE, B. C.

BLEACHED SULPHITE PULP
for Paper Making

RAYON PULP
Manufactured to Customers' Specifications

BRITISH COLUMBIA PULP & PAPER COMPANY
Limited

Bank of Nova Scotia Building -- Vancouver, B. C.



WOODFIBRE, B. C.

Staple Fiber Takes Lead

In the table giving world rayon production it will be noted that for the first time staple fiber production exceeded that of the filament yarn. "The progress of rayon staple fiber production is one of the most interesting phenomena in the world's textile history," says the Rayon Organon. "In the span of a single decade, from 1930 to 1940, world production of rayon staple fiber increased from 6 million pounds to 1,350,000,000, a gain 225 fold."

"This 1940 staple fiber production record was due principally to a tremendous increase in the output of the German staple fiber industry. Italy's production also increased, while Japan's remained approximately at its 1939 level. The great need of the Axis Powers for a substitute for foreign grown cotton and wool has been the principal stimulus to this great growth of the world staple fiber industry over the past few years.

"World production of rayon filament yarn in 1940 was practically unchanged from the 1939 level. During the past year, the United States kept its position as the leading rayon yarn producing country and increased its production, thus comprising 34 per cent of the world's total. This is the first time since the world rayon industry "came of age" that any one country has accounted for such a large share of the world's rayon yarn output. Rayon filament yarn, a 'luxury' product, has found great favor in the United States. However, its production abroad has been reduced not only by the war, but also because of the urgent need for rayon staple fiber which can be produced abroad very cheaply and in large volume."

Dissolving Pulp for Defense

● Dissolving wood pulp may be called upon to aid materially in the American defense program according to a recent article by Sidney B. Self, appearing in the Wall Street Journal. Mr. Self wrote in part:

● "The most import primary material for making smokeless powder is purified cellulose, base for rayon, film and plastics, which is made into nitrocellulose by treatment with nitric and sulphuric acids. It takes about six-tenths to seven-tenths of a pound of cellulose per pound of powder.

United States Rayon Production in Millions of Pounds

	1940	1939	1938	1937	1936	1935	1930
Rayon Filament Yarn	390.1	328.6	257.6	321.7	277.6	257.6	127.3
Rayon Staple Fiber	81.1	51.3	29.9	20.2	12.3	4.6	0.4
TOTALS	471.2	379.9	287.5	341.9	289.9	262.1	127.7

United States Rayon Consumption in Millions of Pounds

	1940	1939	1938	1937	1936	1935	1930
Rayon Filament Yarn	388.7	362	274	267	298	253	118
Rayon Staple Fiber	99.1	96.5	53	41	25	6	1
TOTALS	487.8	458.5	327	308	323	259	119

World Rayon Production in Millions of Pounds

	1940	1939	1938	1937	1936	1935	1930
Rayon Filament Yarn	1,150	1,145	990	1,199	1,023	940	451
Rayon Staple Fiber	1,350	1,082	958	619	299	140	6
TOTALS	2,500	2,227	1,948	1,818	1,322	1,080	457

Source: Rayon Organon, January, 1941.

"At present rayon, film lacquers and plastics consume about 100,000 tons (200 million ponds) of pure cellulose yearly, which is made from about 430,000 bales (600 pounds each) of cotton linters.

"An average 13 million-bale cotton crop produces about 1,200,000 bales of linters, but of this only about 750,000 bales are what are called chemical linters, the very short fibres. Other linters of longer length are used for upholstery and bring a higher price.

"It is estimated that a 2,500,000 pound daily powder output would use over 1,500,000 pounds of linters or roughly 800 tons. This totals around 280,000 tons of cellulose a year and would require around 1,200,000 bales of linters, which is very much more than is available of the chemical grade needed.

● "There are two solutions of the problem. The chemical solution is to use cellulose made from wood pulp to supplement the cotton linters cellulose. Supplies of this are said to be sufficient to meet the emergency and chemical cellulose from wood pulp is thoroughly satisfactory for powder, as shown by exhaustive tests that have been made.

"The other solution would be to use surplus stocks of cotton. This would be nice for the cotton farmer, but would entail the building of a large number of additional cotton purification plants and would be much more expensive. It would in the first place consume cotton worth about 13 cents a pound, and in the second place necessitate the cutting of the long cotton fibers into short lengths before it could be chemically treated.

"While political pressure may be brought to bear to use the surplus cotton pile, chemists strongly favor the use of wood pulp cellulose, primarily because there is ample wood pulp capacity built and operating in the country to supply all likely needs of the powder industry, and no new plants would have to be built as would be needed if an attempt was made to use cotton.

"Germany has used cellulose wood pulp to make powder since the last war, and the British recently used a shipment

(Continued on page 117)

CELLULOSE CONSUMPTION BY THE U. S. RAYON INDUSTRY

Short Tons of Refined Cellulose

	TOTAL PULP		WOOD PULP*		LINTERS PULP*		RAW COTTON LINTERS†
	Tons	Per Cent	Tons	Per Cent	Tons	Per Cent	Bales
1930	72,000	100	45,000	62	27,000	38	115,000
1931	84,000	100	53,000	63	31,000	37	132,000
1932	74,000	100	43,000	58	31,000	42	132,000
1933	115,000	100	65,000	57	50,000	43	213,000
1934	112,000	100	63,000	56	49,000	44	209,000
1935	137,000	100	86,000	63	51,000	37	218,000
1936	151,000	100	104,000	69	47,000	31	201,000
1937	176,000	100	132,000	75	45,000	25	187,000
1938	147,500	100	110,000	75	40,000	25	160,000
1939	194,500	100	145,000	75	53,000	25	211,000
1940	238,000	100	178,000	75	60,000	25	256,000

*Wood and linters in purified form as used by rayon producers.

†Bales of raw cotton linters figured on the basis of one-third overweight on refined linters pulp (due to refining losses) and converted to bales on the basis of 625 pounds net weight per bale.

Source: Rayon Organon, April, 1941.

West Coast Payrolls Climb in 1940

Wages Paid by Washington and Oregon Pulp and Paper Mills in 1940 total $18,428,053, Up 22.8% over 1939—Washington Payroll Up 21.8% — Oregon Payroll Rises 26.6% — California Reports Payroll of $9,948,334 in 1940.

THE improvement in operations of Pacific Coast pulp mills due to the elimination of shipments from Europe together with the generally higher volume of business received by paper and paperboard mills on the Pacific Coast, resulted in a new all-time high combined payroll for the states of Washington and Oregon in 1940. .

The total of wages paid in the industry in 1940 for Washington, Oregon and California (data for California available for the first time), amounted to $28,376,387.

Washington's pulp and paper mill payroll went to a new record of $14,517,595 which was $2,597,773 or 21.8 per cent higher than in 1939. The 1940 figure exceeded the previous record year of 1937 payroll of $12,607,622 by $1,909,973 or 15.2 per cent.

The hours worked by employees of Washington pulp and paper mills totaled 16,905,387 hours in 1940 against 14,197,262 hours in 1939, an increase of 2,708,125 hours or 19,07 per cent. The wage increase put into effect June 1, 1940 is reflected in 2.63 per cent greater increase in wages than in hours worked. Compared with 1937, the previous high year, the hours worked in 1940 were 599,454 hours or 3.7 per cent greater than the 16,305,933 hours worked in 1937. Although but 3.7 per cent more hours were worked in 1940 than in 1937, the payroll was 15.2 per cent higher.

The Census of Manufactures for 1939 reported that the mills in

TABLE I

Average Hourly Earnings in Cents of Productive Employees (Exclusive of Converting Employees) in Pulp and Paper Manufacturing.

(Source: Calculated from tables received from A.P.P.A.)

	June to December Inclusive						
	1934	1935	1936	1937	1938	1939	1940
Pacific Coast	58.3	62.0	66.9	79.7	79.6	79.8	83.8
All Other U. S. Regions	51.3	52.7	53.1	62.3	61.3	61.6	65.0
North East (New England)	52.2	53.8	53.8	62.4	60.8	61.2	64.0
Middle Atlantic	53.0	55.3	55.9	65.0	63.9	64.3	67.6
Lake States	52.7	53.9	54.9	65.2	65.0	65.6	68.0
Central (North)	51.6	53.4	54.0	61.7	62.6	62.4	64.4
Central (South)	46.5	47.4	47.7	55.9	54.9	55.1	59.5
Southern (East)	45.8	47.0	47.7	56.9	57.3	55.9	61.7

TABLE II

Average Weekly Earnings of Productive Employees (Exclusive of Converting Employees) in Pulp and Paper Manufacturing.

(Source: Calculated from tables received from A.P.P.A.)

	June to December Inclusive						
	1934	1935	1936	1937	1938	1939	1940
Pacific Coast	$20.32	$22.80	$25.73	$29.60	$26.49	$30.12	$32.33
All Other U. S. Regions	17.59	19.84	21.74	23.85	23.19	24.65	26.11
North East (New England)	17.95	19.88	21.62	23.88	22.39	24.27	24.35
Middle Atlantic	18.57	20.88	23.23	24.72	24.04	26.74	26.29
Lake States	18.18	20.43	22.98	25.79	25.17	26.62	27.52
Central (North)	17.34	20.04	22.06	23.65	23.41	25.23	26.03
Central (South)	16.18	19.39	19.41	21.09	20.79	21.85	23.25
Southern (East)	14.57	17.60	18.43	20.98	21.39	21.82	24.52

STATE OF CALIFORNIA

Employment and Payroll Data in the Paper and Paper Products Manufacturing Industry 1940*

Based on All Contribution Reports Submitted to the Department Prior to February 25, 1941

Industry	Total wages paid	Wages subject to contributions	Number of establishments(a)	Number of Workers — Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Coated and Glazed Paper	$ 602,703	$ 541,729	9	293	281	281	289	296	297	302	303	300	308	309	310
Paper Envelopes	870,034	813,487	13	536	544	547	563	571	568	564	569	572	567	574	543
Paper Bags	545,844	517,396	7	363	348	364	382	402	398	415	418	431	437	440	438
Paper Board Containers and Boxes	6,184,790	5,863,040	51	3,838	3,831	3,845	3,649	3,735	3,764	3,856	3,895	3,917	3,996	3,977	3,908
Pulp Goods and Paper Products, not elsewhere classified	656,307	615,930	28	435	432	443	460	484	467	492	484	511	513	537	537
Unclassified (b)	1,088,656	965,074	12	621	624	596	592	611	661	707	716	696	598	592	581
Total	$9,948,334	$9,316,656	120	6,086	6,060	6,076	5,935	6,099	6,155	6,336	6,385	6,427	6,419	6,429	6,317

(a) Each branch of a multiple establishment-concern is counted as a separate establishment.

(b) Includes branches of such firms as pulp mills, paper mills, and paper board mills, consolidated to avoid divulging confidential information.

*California Department of Employment affiliated with Social Security Board. Report 127A No. 19 Research and Statistics April 15, 1941.

more than in 1939. In 1937 the Washington employed 8,321 men and women in that year and paid them $13,377,436 in wages and salaries. (See table on page 24)

Oregon's Payroll

● In 1940 Oregon's pulp and paper mills reported a payroll of $3,910,458. This was $821,397 or 26.6 per cent more than the 1939 payroll of $3,089,061. The 1940 payroll was exceeded in 1937 when the total was $4,298,917. The 1940 payroll was $388,459 or 9.3 per cent less than in 1937. The 674,075 work days in the State of California, and the in- 1940 were 93,914 or 16.2 per cent more than the 580,161 work days in 1939. The work days in 1940 were exceeded by four other years, 1934, 1935, 1936 and 1937. In 1937 the high in work days was reached with 857,696. The 1940 total of work days was 183,621 or 21.4 per cent less, but it will be noted that the 1940 payroll was but 9.3 per cent less.

The approximate number of employees in 1940 in Oregon's pulp and paper industry was 2,338 or 294 number of employees reached the peak with 2,861 or 523 more than in 1940.

The Census of Manufactures for 1939 reports that a total of 3,084 men and women were employed by the Oregon industry and paid a total of $4,387,811. (See page 24)

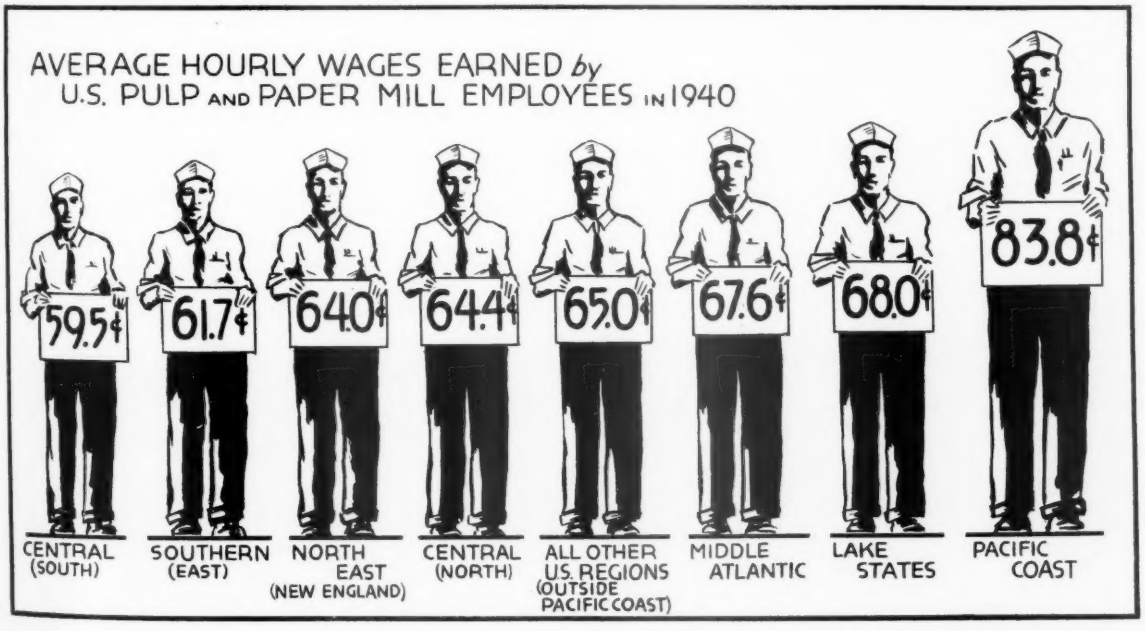
California's Payroll

● The payroll of the industry in California appears in table form for the first time. In the past it has not been tabulated in form comparable to Washington and Oregon data by

STATE OF OREGON
Payrolls and Employment
1927-1940*
PULP AND PAPER MANUFACTURING

Year	Payroll	Work Days	Approximate Number Employees
Fiscal Year 1927-1928	$2,691,220.18	581,833	1,939
Fiscal Year 1928-1929	2,946,218.92	640,724	2,136
Six Mos. July to Dec., 1931, Inc.	1,017,435.13	235,114	1,566
Calendar Year 1932	1,896,692.09	504,311	1,681
Calendar Year 1933	1,819,904.95	535,789	1,786
Calendar Year 1934	2,577,436.84	700,842	2,336
Calendar Year 1935	2,984,889.22	778,547	2,837
Calendar Year 1936	3,578,624.01	839,063	2,697
Calendar Year 1937	4,298,917.22	857,696	2,861
Calendar Year 1938	3,207,313.93	596,405	2,052
Calendar Year 1939	3,089,061.69	580,161	2,044
Calendar Year 1940	3,910,458.40	674,075	2,338

*Statistics furnished by the Oregon State Industrial Accident Commission.
Data from July 1, 1929, to June 30, 1931, not available.



STATE OF WASHINGTON
PAYROLLS AND HOURS WORKED
1927-1940*

Year.	ALL HAZARDOUS INDUSTRY OF STATE — Payroll	Workmen Hours	Increase or Decrease Compared With Preceding Year Payroll	Hours Work	LUMBERING — Payroll	Workmen Hours	Increase or Decrease Compared With Preceding Year		PULP AND PAPER MANUFACTURING — Payroll	Workmen Hours	Increase or Decrease Compared With Preceding Year Payroll	Hours Work
1927	$255,669,929	396,071,584	.....	.....	$83,446,482	130,841,328	.....	.....	$4,855,526	7,710,848	.....	.....
1928	271,223,403	414,002,480	6.08%	4.53%	83,782,300	127,973,488	.40%	-2.19%	5,573,223	8,507,600	14.78%	10.33%
1929	288,903,912	437,600,400	6.52%	5.70%	86,986,842	131,720,152	3.82%	2.93%	7,845,335	12,275,072	40.77%	44.28%
1930	260,002,808	397,369,096	-10.00%	-9.19%	63,093,612	98,102,528	-28.45%	-25.52%	9,110,285	13,874,832	16.12%	13.03%
1931	188,705,890	317,120,680	-27.42%	-20.19%	33,236,663	64,161,624	-47.32%	-34.60%	6,990,889	11,360,944	-23.26%	-18.12%
1932	131,893,000	255,078,920	-30.11%	-19.56%	16,853,140	41,214,176	-49.29%	-35.77%	5,063,638	8,960,224	-27.57%	-21.13%
1933	129,023,888	260,928,662	-2.18%	2.29%	23,101,145	51,066,187	37.07%	23.90%	5,166,375	9,693,579	2.03%	8.18%
1934	161,702,804	284,179,483	25.33%	8.91%	29,693,289	51,106,876	28.54%	.08%	7,435,151	11,835,457	43.91%	22.10%
1935	187,578,233	312,935,429	16.00%	10.12%	35,389,039	57,808,831	19.18%	13.11%	8,131,888	12,560,285	9.37%	6.12%
1936	241,960,112	379,926,777	28.99%	21.41%	51,799,595	77,214,714	46.32%	33.57%	9,858,151	14,638,927	21.23%	16.55%
1937	286,480,085	412,743,811	18.40%	8.64%	58,947,801	77,777,272	13.80%	.75%	12,607,622	16,305,933	27.89%	11.37%
1938	267,784,196	379,432,496	-6.53%	-8.07%	43,719,909	55,718,862	-25.93%	-28.36%	10,227,766	12,254,194	-18.88%	-24.85%
1939	303,602,602	413,236,113	+13.38%	+8.91%	50,275,519	63,648,087	+14.99%	+14.23%	11,919,822	14,197,262	+16.54%	+15.86%
1940	345,887,756	458,512,732	+13.93%	+10.96%	56,867,830	70,377,299	+13.11%	+10.57%	14,517,595	16,905,387	+21.79%	+19.07%

Industry as a whole: Payroll in 1940 was 35.29% more than in 1927 while hours worked show an increase of 15.77%, and payrolls in 1940 showed an increase of 19.72% while hours worked showed an increase of 4.78% in comparison with 1929, the peak year.

Lumbering Industry: Payroll and hours worked respectively in 1940 were 31.85% and 46.21% less than in 1927, and 34.62% and 46.57% less than in 1929, the peak year.

Pulp and Paper Mfg.: Payroll and hours worked respectively in 1940 were 198.99% and 119.24% greater than in 1927. The payroll in 1940 was 85.05% more and the hours worked were 37.72% more than in 1929; payroll and hours worked respectively were 15.15% and 3.68% more than in 1937, the previous peak year in this industry.

formation was only available in Census of Manufactures reports. (See page 24)

In 1940 the entire paperboard and paper converting industry paid out total wages of $9,948,334 to approximately 6,000 plus employees.

Hourly and Weekly Earnings

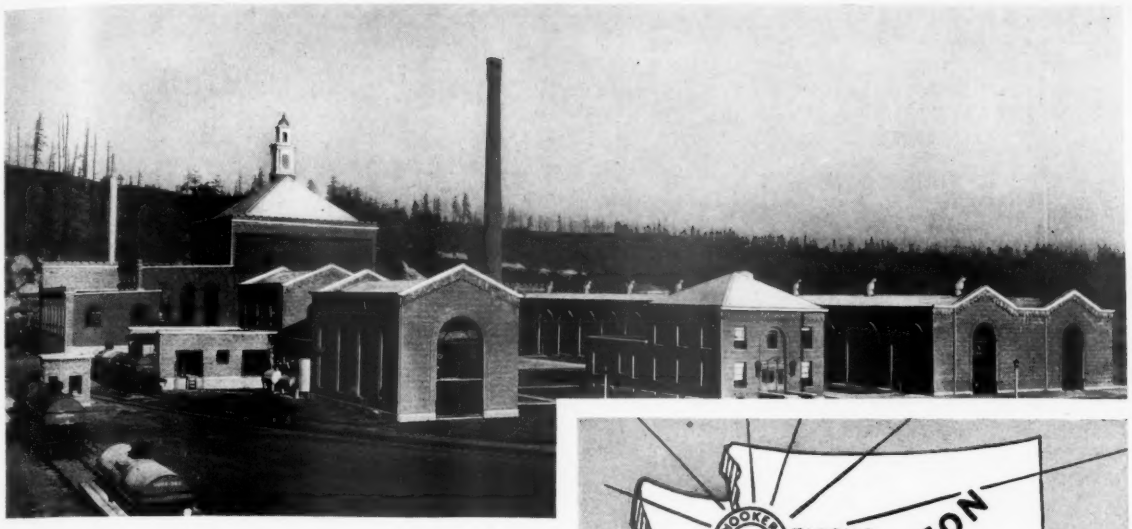
● From the tables and the chart it will be seen that the Pacific Coast industry again led the nation, in fact the entire world, in hourly and weekly wages paid to employees. The average per hour in 1940 was 83.8 cents, an increase of 4 cents over the 79.8 cents paid in 1939. This was 15.8 cents per hour more than paid by the nearest other pulp and paper making region, the Lake States with 68 cents, and 24.3 cents per hour more than paid on the average to employees in mills in the Central (South) which was 59.5 cents.

With average weekly earnings per employee of $32.33 the Pacific Coast industry showed an increase of $2.21 cents per week. The region paying the next highest weekly wage was the Lake States with $27.52, an increase over the 1939 figure of 90 cents. The lowest weekly wage paid was in the Central (South), $23.25. This was an increase of $1.40 per week.

The average weekly wages paid for all other regions in the United States outside the Pacific Coast was $26.11 in 1940 as compared with $24.65 in 1939, an increase of $1.46 per week. On the hourly basis the average paid by all other regions was 65 cents or 18.8 below the Coast rate of 83.8 cents. The hourly wage increase for the average of the other regions was 3.4 cents.

All comparisons of American wages with foreign wages have been omitted from this review as recent data are not available due to war conditions and since competition is dead for the time being the information would not be presently useful. For the latest available data on foreign wages refer to pages 93 and 95 of the 1940 Annual Review Number.

● The wage agreement in effect since August, 1934 between the Pacific Coast pulp and paper mills and the International Brotherhood of Pulp, Sulphite and Paper Mill Workers and the International Brotherhood of Paper Makers, was renewed June 1, 1940 after negotiation. For details see pages 35 and 36 of this Review Number. A new agreement for 1941--942 will be negotiated at the end of May, 1941.



HOOKER
at Tacoma

for CAUSTIC SODA
LIQUID CHLORINE
for the Paper Industry

The HOOKER plant at Tacoma was established primarily to serve the rapidly expanding paper and pulp industry of the West. Ever since this plant started operations, chemicals for paper making have been among its principal products. Naturally, the desire to serve this industry has been heightened year by year.

Adequate capacity, careful control of quality and uniformity of product and competent technical cooperation with mill technicians distinguish the facilities that have led so many to rely on HOOKER for their chemical requirements.

HOOKER ELECTROCHEMICAL COMPANY
NIAGARA FALLS, NEW YORK
NEW YORK CITY • TACOMA, WASHINGTON

HOOKER HE CO ELECTROCHEMICAL

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Pulpwood Resources Of the Pacific Northwest

Data on available pulpwood in Western Washington and Western Oregon revised in 1940 by the Pacific Northwest Forest & Range Experiment Station — Data for Inland Empire revised in 1940 by the Northern Rocky Mountain Forest & Range Experiment Station.

THE accompanying tables show the latest figures on the volume of pulpwoods, other than Douglas fir, available for cutting in western Washington and western Oregon.

They do not include timber on municipal watersheds, state and national forests, national parks, etc., which, because of laws or declared public policy, is not available for commercial use.

In this region there is nearly eighty billion cubic feet of Douglas fir, about twice the volume of the true pulping species. This species is not included, but in view of recent progress in the pulping of this wood exeprimentally, it should be considered when analyzing the timber available for future use.

These figures are from data prepared by the Pacific Northwest Forest and Range Experiment Station, Portland, based on forest surveys started in 1930, and completed in 1933 and 1934. The results were first published in the Review Number of this journal in 1937, and revised in the 1938, 1939, and 1940 Review Numbers. References may be made to the 1938 issue for greater detail as to the forest study.

● Since completing the survey, the experiment station staff has started the work of re-inventorying each county through field examination. To date the recheck has been completed for 14 counties where the heaviest cutting has occurred: Grays Harbor, Pacific, Pierce, Snohomish, Thurston, Cowlitz, Clallam, Wahkiakum, Lewis and Kitsap Counties in Washington; Clatsop, Columbia, Coos, and Washington Counties in Oregon. The revision in four other counties, Mason and Jefferson Counties, Washington, and Benton and Polk Counties, Oregon, will be completed by the middle of this year, and work is being continued in other counties. It is expected that the re-inventories will be completed at the rate of five or more counties per year.

● Figures on the counties named are based on the re-inventory. The other counties have been brought up to date by adjusting for estimated depletion since the original survey, the depletion being determined from the timber cut figures.

Although the data are partially based on estimates of depletion, the figures have been rounded to thousands of cubic feet, and because of the large volume, the percentage of error can be considered relatively small. The tables are sufficiently accurate for all practical purposes.

The cubic foot volume estimates give the total sound wood content of the stem of the tree, exclusive of bark and limb wood. Decayed material is omitted, as well as the entire volume of all cull logs having more than two-thirds of the board-foot content defective. No deduction is made, however, for breakage in logging.

The tables do not take into consideration the economic availability of the pulp species, that is, whether or not the timber could be profitably logged at this time. Table III, page 111 of the 1938 Review Number, gives this information. Changes through depletion make revision of this particular table impractical, but if desired, the reader may refer to the 1938 figures, since the percentages in each class of economic availability remain approximately the same at this time.

The ratio of timber in the various ownership classes also remains about the same. Approximately 45 per cent is privately owned, 43 per cent on national forest lands and 12 per cent on other public lands such as county, state, Indian reservations, etc.

Geographical distribution of pulpwood volume is shown by counties in Table II.

Table I

Volume in thousand cubic feet[1] of pulp woods other than Douglas fir, in Western Washington and Western Oregon, available for cutting,[2] by species group.[3]

Species.	Western Oregon	Western Washington	Total
Western hemlock	5,845,000	16,229,000	22,074,000
Sitka spruce	1,022,000	1,320,000	2,342,000
Balsam firs[4]	3,484,000	6,345,000	9,829,000
Mountain hemlock and Engelmann spruce	943,000	309,000	1,252,000
Black cottonwood	64,000	124,000	188,000
Total	11,358,000	24,327,000	35,685,000

[1] Includes all trees 4 inches and more diameter breast height.

[2] Excludes timber reserved from cutting in municipal, State, and Federal ownership.

[3] Data from Pacific Northwest Forest and Range Experiment Station. Based on Forest Survey inventory of 1933 adjusted for estimated cutting depletion 1934-1939, inclusive.

[4] Includes Pacific silver fir, Grand fir, noble fir, Shasta red fir, white fir, and alpine fir.

● In the Inland Empire Area the data on pulpwood species in Northern Idaho, including Engelmann spruce, Western and mountain hemlock, grand fir and black cottonwood, have been revised by the Northern Rocky Mountain Forest and Range Experiment Station at Missoula, Montana. In revising the accompanying table, M. Bradner, director of the station, stated:

"Estimates for Northeastern Washington and Northern Idaho are based on a revision of 1932-1935 forest survey data. The use of different board foot-cubic foot conversion factors account for the change in the estimates for Western Montana.

"Heretofore the Montana data included only the sawlog portion of the trees, with a minimum top diameter ranging from 8 to 16 inches; no cottonwood limbwood was included. Except for the fact that in Western Montana no estimates are available for cordwood trees, the data for the three subregions are now on a comparable basis."

These revisions brought the Englemann spruce totals for Northeastern Washington from 16,368,000 cubic feet to 29,900,000 cubic feet; for Northern Idaho from 584,200,000 cubic feet to 595,100,000 cubic feet, and for Western Montana from 946,000,000 cubic feet to 1,018,200,000 cubic feet.

The new table shows for hemlock an increase for Northeastern Washington to 45,300,000 cubic feet from 18,799,000 cubic feet in the previous table; for Northern Idaho to 374,600,000 cubic feet from 366,300,000 cubic feet; and for Western Montana to 36,000,000 cubic feet from 30,008,000 cubic feet.

In the revised table grand fir shows an increase for Northeastern Washington from 26,015,000 cubic feet to 70,000,000 cubic feet; for Northern Idaho from 1,655,000,000 cubic feet to 1,692,000,000 cubic feet; and for Western Montana from 102,322,000 cubic feet to 122,800,000 cubic feet.

The revisions reduce the black cottonwood figures for Northeastern Washington from 37,000,000 cubic feet reported a year ago to 36,000,000 cubic feet; but increase the total for Northern Idaho from 11,361,000 cubic feet to 12,100,000 cubic feet; and for Western Montana from 24,838,000 cubic feet to 42,900,000 cubic feet.

Totals for all species were revised upward in the new table accompanying this article. The total for Northeastern Washington was increased from 61,219,000 cubic feet to 145,236,000 cubic feet; for Northern Idaho from 2,616,861,000 cubic feet to 2,674,700,000 cubic feet; and for Western Montana from 1,103,168,000 cubic feet to 1,203,900,000 cubic feet. It will be noted from the footnote to the table that no estimates are as yet available for cordwood trees in Western Montana.

Finland's Loss of Productive Capacity

● According to the peace treaty between Finland and the Soviet Union signed on March 12, 1940, Finland lost a number of pulp and paper mills, the aggregate annual capacities of which were as follows:

Sulphite	257,000 tons
Sulphate	133,000 tons
Paper	37,000 tons
Paperboard	40,000 tons
Mechanical Pulp	20,000 tons

For purposes of comparison it may be mentioned that Finnish exports, representing roughly about 90 per cent of production, were as follows during 1938:

Wet Mechanical Pulp	367,015 tons
Dry Mechanical Pulp	41,049 tons
Wet Sulphite Cellulose	222,059 tons
Dry Sulphite Cellulose	558,675 tons
Wet Sulphate Cellulose	158,703 tons
Dry Sulphate Cellulose	272,358 tons
White Cardboard	44,020 tons
Brown Cardboard	18,506 tons
Other Cardboard	6,502 tons
Board at most 3 millimeter thick	12,557 tons
Other kinds of paper board	19,155 tons
Newsprint	357,930 tons

Considerable quantities of wrapping paper and other kinds of paper and paper products were also exported, according to this report from the American Consul Geneal in Helsinki, Finland, in September, 1940. The tons are metric.

Table II

Volume of pulp woods, other than Douglas fir, in Western Washington and Western Oregon available for cutting, by county.[1]

In thousands of cubic feet

Washington County		Oregon County	
Clallam	2,837,000	Benton	45,000
Clark	34,000	Clackamas	1,121,000
Cowlitz	907,000	Clatsop	1,212,000
Grays Harbor	2,643,000	Columbia	42,000
Island	9,000	Coos	378,000
Jefferson	2,779,000	Curry	185,000
King	2,113,000	Douglas	1,632,000
Kitsap	20,000	Hood River	295,000
Lewis	2,127,000	Jackson	960,000
Mason	444,000	Josephine	110,000
Pacific	1,821,000	Lane	1,560,000
Pierce	1,272,000	Lincoln	624,000
San Juan	11,000	Linn	1,456,000
Skagit	1,784,000	Marion	513,000
Skamania	1,824,000	Multnomah	33,000
Snohomish	2,199,000	Polk	183,000
Thurston	34,000	Tillamook	937,000
Wahkiakum	475,000	Washington	51,000
Whatcom	994,000	Yamhill	21,000
Total	24,327,000	Total	11,358,000

Includes all trees 4 inches and more diameter breast height.

[1]Compiled by Pacific Northwest Forest and Range Experiment Station from forest-survey data adjusted for estimated depletion by cutting to 1940.

(IN CHINESE)

This means PAPER

This means KENWOOD FELTS

RECENTLY we found in the "KVP PHILOSOPHER," published by the Kalamazoo Vegetable Parchment Company, the Chinese character for "paper" and the story of its origin. It seems that when paper was invented in China about 105 A.D. a new character had to be created to describe it. Literally translated, it means, "having the personality of silk."

This was all so interesting that we asked a Chinese scholar to write for us: "Kenwood Felts." He said that, like his venerable ancestors, he would have to do so through characters which express the *qualities* of Kenwood Felts and he wrote those above. Literally translated, they mean: "Having great strength; having long life; having the ability to remove water easily; having the character of good finish."

The Chinese are very wise and understanding.

KENWOOD WOOL PRODUCTS

F. C. HUYCK & SONS

ESTABLISHED 1870

KENWOOD FELTS · ALBANY, N. Y.

INLAND EMPIRE PULPWOOD

Amount of Pulpwood in the Inland Empire by Species and Locality in Thousands of Cubic Feet

Subregion[1]	Thousand Cubic Feet											
	Engelmann Spruce			Hemlock[2]			Grand Fir[2]			Black Cottonwood			All Species		
	Saw timber trees	Cordwood trees	Total	Saw timber trees	Cordwood trees	Total	Saw timber trees	Cordwood trees	Total	Saw timber trees	Cordwood trees	Total	Saw timber trees	Cordwood trees	Total
Northeastern Washington[3]	16,100	13,800	29,900	23,500	21,800	45,300	28,600	41,400	70,000	28	8	36	68,228	77,008	145,236
Northern Idaho[3]	464,500	130,600	595,100	189,400	185,200	374,600	1,211,300	481,600	1,692,900	10,400	1,700	12,100	1,875,600	799,100	2,674,700
Western Montana[4]	1,018,200	.....	1,018,200	36,000	.....	36,000	122,800	.....	122,800	42,900	.....	42,900	1,219,900	.....	1,219,900
Total for Inland Empire	1,498,800	144,400	1,643,200	248,900	207,000	455,900	1,362,700	523,000	1,885,700	53,328	1,708	55,036	3,163,728	876,108	4,039,836

[1]Northeastern Washington consists of Spokane, Stevens and Pend Oreille counties. Northern Idaho is the portion of that State north of the Salmon River; Western Montana is the portion west of the Continental Divide.

[2]Included with hemlock and grand fir are small quantities of mountain hemlock and alpine fir respectively.

[3]Volumes indicated are for all unreserved commercial forests, i.e., economically available for cutting, either now or prospectively, and are based on 1932-35 forest survey data adjusted for growth and drain to January 1, 1941. Under saw timber is included the volume of coniferous trees larger than 13 inches d.b.h. and the volume of cottonwood trees larger than 11 inches d.b.h.; under cordwood is included the volume of trees from 5 inches d.b.h. to saw-timber size. All volume estimates are for the sound wood volume exclusive of bark to a 4-to-6 inch top diameter. The cottonwood estimate includes the volume of peeled limbs 4 inches and larger in diameter.

[4]Volumes are for saw timber trees only and are based on extensive estimates.

To convert the cubic-foot volumes of saw timber trees to Scribner log scale, multiply by the following factors: Engelmann spruce—5.5; hemlock and grand fir—5.1; cottonwood—3.8.

Source: Northern Rocky Mountain Forest & Range Experiment Station, Missoula, Montana. M. Bradner, Director, states that the use of different board foot-cubic foot conversion factors account for the changes in the estimates for Western Montana over previous tables. Heretofore the Montana data included only the sawlog portion of the trees with a minimum top diameter ranging from 8 to 16 inches; no cottonwood limbwood was included. Except for the fact that in Western Montana no estimates are available for cordwood trees, the data for the three subregions are now on a comparable basis.

The above map of Western Oregon and Western Washington shows by counties the total volume in thousands of cubic feet of pulpwood, other than Douglas fir . . . Revised in 1940.

Rapid Growth of Spruce-Hemlock Found on Experimental Forest

by P. A. BRIEGLEB*

ABOUT the year 1845 a great fire swept through the northern Coast Range of Oregon—the Nestucca fire—starting, so the story goes, from sparks that blew into the forest from an open fire under the wash boiler of a pioneer woman. It blackened more than the recent Tillamook burn, probably a third of a million acres, much of which was originally covered by a dense stand of huge trees as judged by the remnants of snags and piles of rotten wood that dot the area. A new forest of seedlings sprang into being in the ashes of the old, from seed cast later by the scattered trees, from islands of timber that escaped destruction and from seed that survived the flames.

This would have formed by now a continuous "second-growth" stand, about 90 years old had not repeated fires and land clearing taken their toll—mostly the former. Parts of the old burn were so heavily and repeatedly scourged by fire that they are still open worthless fern-patches. Other parts of old burn escaped reburning and now carry a magnificent stand of fast maturing timber. Near the coast it is mostly spruce and hemlock, further inland Douglas fir.

On such an area between Otis and Neskowin on the Coast Highway is located the Cascade Head Experimental Forest. Here there are several thousand acres that have not been touched by fire since the day of the pioneer's wash boiler fire, and now they cary a well-stocked even-aged stand of spruce, hemlock and Douglas-fir.

In 1934 a series of eleven one-acre growth plots was established in order to get a continuous positive record of the subsequent life history and growth of this forest. They were distributed along the Cascade Head ridge, from 1 to 6 miles back from the ocean front and 800 and 1,200 feet above it. Every tree on the plots was tagged by number, its diameter measured, and its crown class recorded; heights were measured for a proportion of the trees.

In the fall of 1940, six growing seasons later, all the trees on the 11 plots were remeasured and again their volumes were computed. Now at an age of 89 years the stand on the average acre has reached the tremendous gross wood volume in living trees of 262 cords. Table 1 gives some of the vital statistics for these plots in the spring of 1935 and in the fall of 1940. The number of trees dropped from 212 to 203, the average diameter of the trees increased .8 inch, their heights 6 feet and their volumes in proportion.

The present gross volume of 262 cords per acre indicates a mean annual increment to date of 2.94 cords per acre. Although its cordwood growth rate has leveled off, this stand added 16.8 cords to its per acre volume between measurements, an increment in six years equal to the total wood capital found in virgin forests of some regions.

This spectacular net growth was made in spite of loss from suppression and windfall that averaged 5.8 cords of sound material per acre from 1935 to 1940. More than four-fifths of the loss was in trees 12 inches or larger in diameter; one-third was in trees 20 or more inches in diameter, and if thinning could have salvaged or averted part of this mortality the effective periodic growth would have been correspondingly greater.

The individual trees in this immature forest now average about 20 inches in diameter, 133 feet in height — small in comparison to those in this region's virgin stands but larger than those in old-growth forests in some regions. In consideration of the size of the trees it is remarkable that more than 200 still thrive in this stand on the average acre. In contrast, fully-stocked Douglas fir stands of equal diameter suport only 130 trees per acre, and southern pine fewer than 100. Herein lies a partial explanation of the tremendous yield of the West Coast spruce-hemlock type. Less tolerant species cannot flourish in such density.

● All of the wood fiber in this young forest could not be economically converted to useful cellulose under present logging practices, but a huge amount of it could. Although relatively sound and free from rot, approximately one-quarter of its total cordwood volume would be kept in the woods in stumps, tops, broken or defective pieces of felled trees, and in rough or small trees left standing on present pulpwood operations in the region. Even at this existing crude standard of utilization the mean annual increment of marketable pulpwood made on this land is impressive: 2 1/5 cords per acre. Under effective forest management the annual growth from 50,000 acres of such land, a block less than 9 miles square, could supply the wood required to operate a 150-ton sulphite pulp mill continuously at full capacity.

The harvesting and processing of the annual crop from such a 50,000-acre forest under sustained yield management could provide permanent jobs for about 760 forest and pulp mill workers, 370 paper-mill employees. In terms of community support such an integrated industrial unit based on continuous forest management for pulpwood production would mean a direct source of livelihood for a population of about 2,600 counting workers and their families, in addition to indirect sup-

Although it is generally recognized that the coastal forests of Oregon and Washington grow very rapidly, past statements on the rate of growth have been based largely upon estimates in the absence of accurate measurements taken over a period of years. Facts now show these estimates to have been conservative.

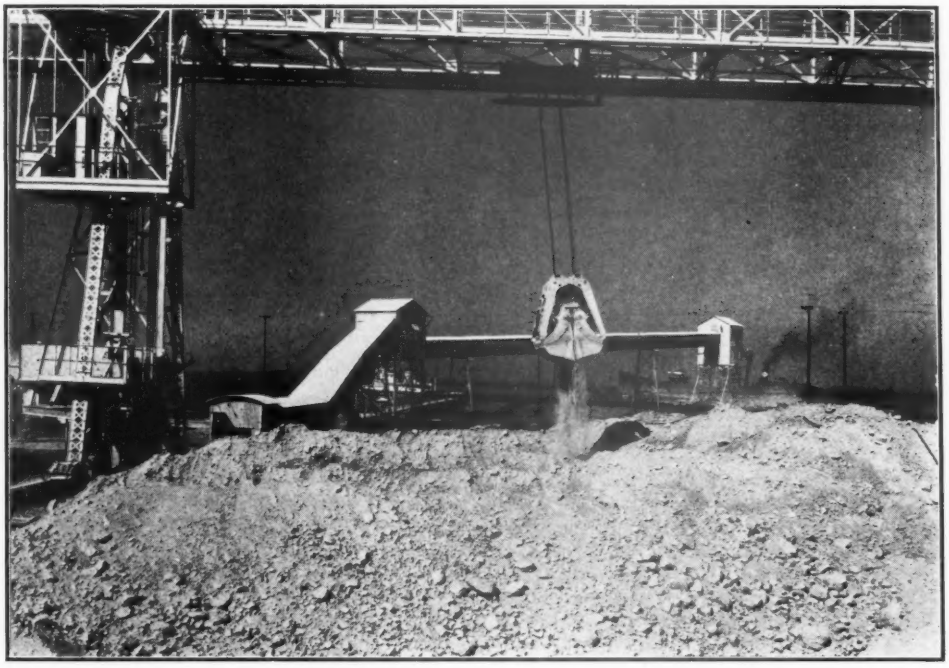
In this article Mr. Briegleb gives the astonishing results of scientific growth measurement of a sample area over a period of six years, 1934-1940.

"The present gross volume of 262 cords per acre," states Mr. Briegleb, "indicates a mean annual increment to date of 2.94 cords per acre. Although its cordwood growth rate has leveled off, this stand added 16.8 cords to its per acre volume between measurements, an increment in six years equal to the total wood capital found in virgin forests in some regions."

*Pacific Northwest Forest & Range Experiment Station, Forest Service, United States Department of Agriculture, Portland, Oregon.

The 89-Year-Old Spruce-Hemlock Stand on the Cascade Head Experimental Forest where a series of sample plots shows an average gross volume of 262 cords per acre.

SULPHUR FILLS THE NEED



Shipping sulphur at Port Sulphur, La.

Today's rapid-fire world events . . . invasion of new lands, sinking of convoys, stepping up of national defense . . . place unprecedented strains on American industry. The sulphite pulp branch of the pulp and paper industry, for example, had to shoulder a new burden when imports of sulphite pulp from Scandinavian countries were cut off. With the rise in production came heavier need for sulphur, as more than 270 pounds of sulphur are used to make one ton of sulphite pulp. To meet such supply problems as this we have ample above-ground stocks of 99½ per cent pure crude sulphur . . . free from arsenic, selenium and tellurium and ready for immediate shipment. Moreover, to keep abreast of the mounting needs of national defense as they are transmitted to us through our customers, we have increased production at our mines in Louisiana and Texas to fill the numerous industrial uses of this versatile raw material.

FREEPORT SULPHUR COMPANY

OFFICES: 122 East 42nd St.
New York, N. Y.

MINES: Port Sulphur, La.
Freeport, Tex.

"Even at this existing crude standard of utilization the mean annual increment of marketable pulpwood made on this land is impressive: 2 1/5 cords per acre.

"Under effective forest management the annual growth from 50,000 acres of such land, a block less than 9 miles square, could supply the wood required to operate a 150-ton sulphite pulp mill continuously at full capacity.

"The harvesting and processing of the annual crop from such a 50,000-acre forest under sustained yield management could provide permanent jobs for about 760 forest and pulp mill workers, 370 paper mill employees. In terms of community support such an integrated industrial unit based on continuous forest management for pulpwood production would mean a direct source of livelihood for a population of about 2,600, counting workers and their families, in addition to indirect support derived from the forest by many more in secondary or service industries."

port derived from the forest by many more in secondary or service industries.

Typical of second-growth forests the saw-timber volume in this one at Cascade Head varies tremendously according to the standard of measurement employed. By utilizing trees 11.6 inches in diameter and larger to an 8-inch top the gross Scribner scale in living trees obtainable from this forest totals 129,700 board feet per acre. In other words, this 89-year-old spruce-hemlock stand has accumulated Scribner volume at the rate of 1,457 board feet per acre for each year of its life. And this growth rate is still increasing because during the past six years the annual saw-timber increment averaged 1,750 board feet per acre despite an annual loss of 370 board feet of sound volume by windfall and suppression.

The quality of this timber would not excite a sawmill man accustomed to West Coast old-growth, but by standards of some other regions or countries this second-growth would rate as strictly high-grade. Two-thirds of the Scribner scale is in trees larger than 20 inches in diameter, and over one-fifth is in 30-inch or larger trees. By way of contrast it is of interest to recall that in Finland all trees that will make one log at least 18 feet long to a 9-inch top are classed as "large-size." Just about all of the 89-year old timber at Cascade Head would greatly exceed that minimum. Its composition averages 54 per cent hemlock, slightly more than 45 per cent spruce, less than 1 per cent Douglas fir; and the hemlock with an average clear length of 25 feet far surpasses both spruce and Douglas fir in quality (Table 2). Characteristic of its development in well-stocked, even-aged forests it has attained by natural pruning a substantial clear length at an early age, a quality uncommon in hemlock developed in an understory position. Although the stem wood of spruce is not especially durable the limbs are, and hence its natural pruning progresses very slowly. Logically enough the average heights to live crown are in inverse order of tolerance of the three species.

The demand for sawlogs from spruce-hemlock second-growth is now small, but it will probably remain so only as long as there are ample supplies of fine old-growth in the region; as this supply diminishes the sawmill will probably compete sharply with the pulp mill for such second-growth as this at Cascade Head. If only three-quarters of the board-foot volume in this stand could be economically converted to lumber an effective mean annual saw timber increment of about 1,100 board feet per acre would be realized. A 50,000-acre tract of such land managed for the permanent production of saw timber could at that rate yield in perpetuity a 55-million board-foot crop of sawlogs annually and provide stable employment for 440 loggers and sawmill workers.

Under effective and continuous management for production of sawlogs such a forest unit could provide direct support at an American standard of living for a population of more than 1,000 and contribute indirectly to the livelihood of an equal or larger number supported by secondary industries dependent upon primary wealth from the forest.

It is unfortunate for Oregon that all of this third-of-a-million acre Nestucca burn did not escape repeated fires, so that there would now be oncoming second growth, such as that at Cascade Head, available to stock several sawmills and pulp mills perpetually.

(Continued from page 105)

of American wood pulp which they liked better than cotton linter pulp.

"Based on present schedules, there is plenty of cotton linter wood pulp being made to supply the powder industry through next August. The Government has been building up surplus stocks of cellulose since last summer.

"There is no indication as yet that there will be any serious shortage of cellulose pulp for its many uses, although some readjustments may have to be made. Roughly 1,700,000 tons of bleached sulphite wood pulp are made in this country annually. Rayonier Corp., which is the leading supplier of cellulose from wood to the rayon and plastic industries, has a capacity of 370,000 tons annually. Since some of the foreign markets for this grade of pulp have been cut off there will be a surplus supply when needed.

Dissolving Pulp Prices

● Like the paper grades of wood pulp the dissolving grades held their prices from the middle of the year 1940 through until July 1st, 1941. On July 1st, 1940 the rayon grades of bleached sulphite pulp were raised $5 per ton with the base price at $75 per ton of 2,00 pounds, air dry weight, ex dock Atlantic ports. The range on various grades of dissolving pulp ran from $75 to $100, the latter being for the recently developed acetylating grade. The most commonly employed grades were priced at from $75 to $80 per short ton.

TABLE II

Average height to live crown, average and maximum clear length by species

Species	Average Height to Live Crown	Clear Length	
		Average	Maximum
	Feet	Feet	Feet
Sitka spruce	93	8	29
Western hemlock	74	25	70
Douglas fir	101	15	26

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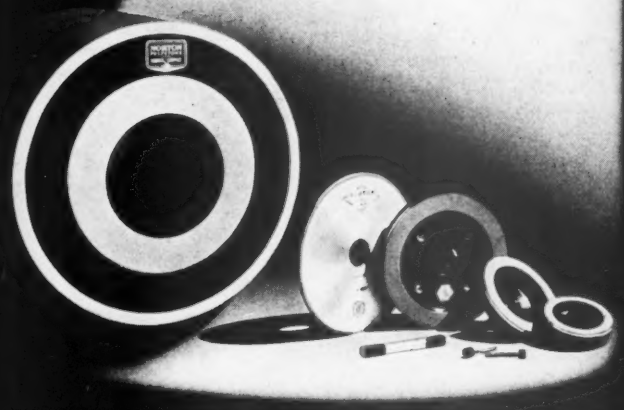

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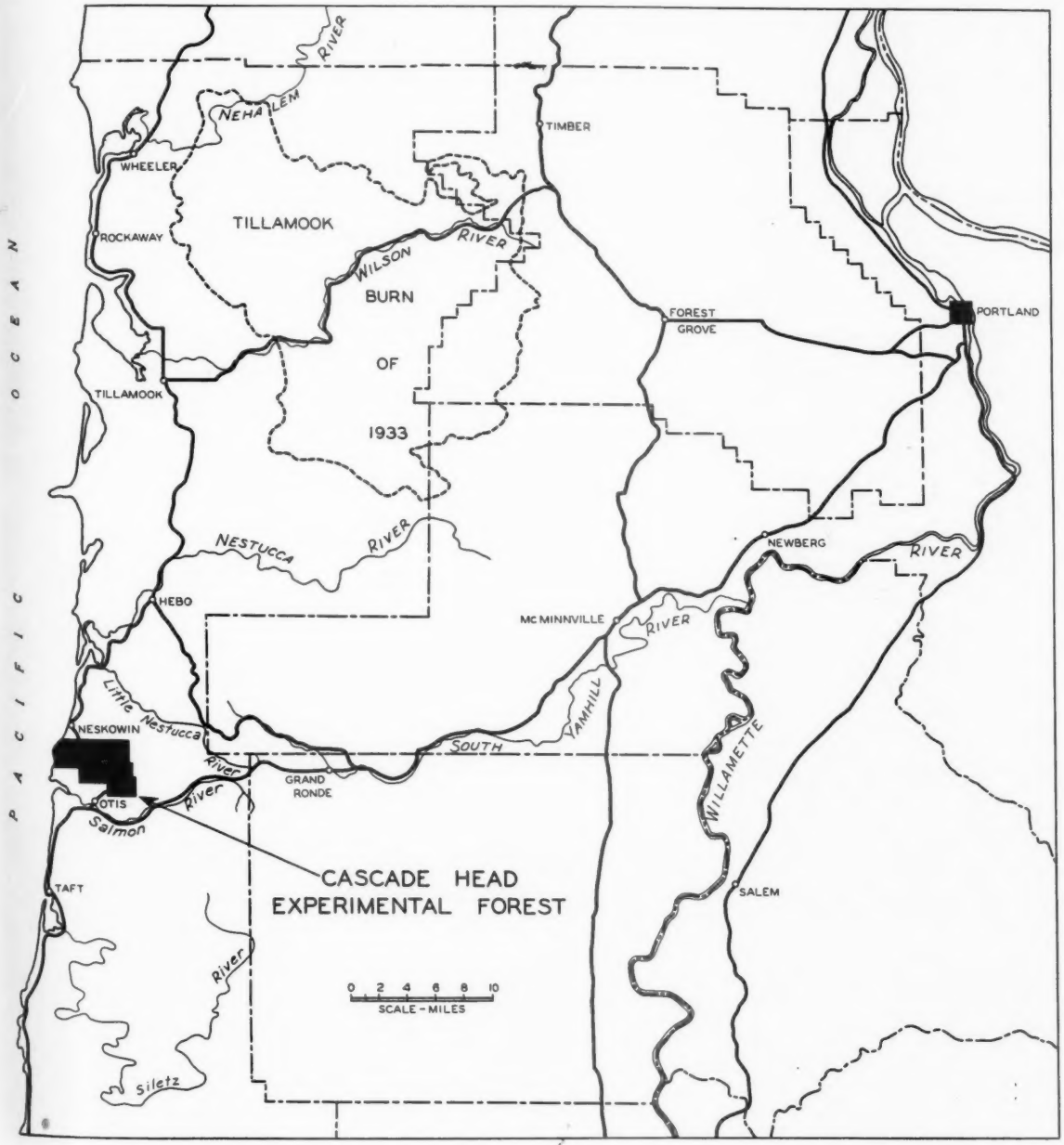
TABLE I

Average statistics for eleven one-acre permanent sample plots in even-aged spruce-hemlock at Cascade Head Experimental Forest

Average of—	Spring 1935 Age 83	Fall 1940 Age 89	Change in Six Seasons
Total number of trees	212	203	—9
D.B.H., all trees, inches	19.1	19.9	+0.8
Total height, all trees, feet	127	133	+6
Volume of—			
All trees, cords	245.2	262.0	+16.8
Trees 11.6"+ D.B.H. bd. ft. Scribner	119,200	129,700	+10,500
Mean annual increment in—			
Cords	2.95	2.94	—0.01
Board feet, Scribner	1,436	1,457	+21



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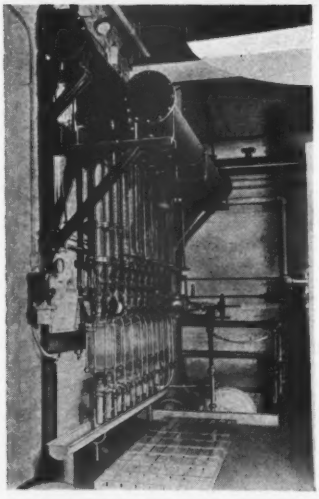

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Swedish Review of Pulp and Paper in 1940

IN the December 31, 1940, issue The Swedish Wood Pulp Journal, published in Stockholm, Sweden, made the following summaries of the pulp and paper situation in Sweden:

"The year 1940 now ending has been highly charged with trouble for the Swedish forest industries, perhaps more so than any previous year. The war had made the last months of 1939 difficult, too, but shipments and production had in spite of all been maintained astonishingly well under the circumstances. The situation suddenly changed for the worse when the German occupation of Norway and Denmark in April 1940 abruptly cut all our communications with our most important customers in the west. Until then we had hoped to be able to continue our trade with western Europe and the overseas countries, even though at great risk and difficulty, during the shipping season just opened. That hope failed, however, and the outlook grew even darker when Belgium and Holland became involved in the war a month or so later. The Swedish building trade had, moreover, dwindled to insignificance last winter after the pre-war building boom.

"The changes in the situation of Sweden since September 1939 have, as far as our forestry and forest industries are concerned, had far-reaching consequences, especiallly during the almost total blockade of our westward trade. Our exports have been almost completely confined to our immediate neighbors and such continental countries as may be reached through Germany; nevertheless, our sales have been relatively good, all considered, in respect of wood and certain qualities of cellulose, while other pulp qualities and paper have been in a worse case. Almost without exception, all business has had to be conducted under trade agreements as regards the exchange of goods and the transfer of payments. On the whole the product prices of the forest industries have been maintained at a fairly steady level since April/May, but the production costs have simultaneously been rising; the difficulty of obtaining at reasonable cost certain supplies, particularly for the cellulose and paper industries, has also been considerable.

"The huge efforts made to replace by forest products the fuel and cattle foods normally imported by Sweden seem, both technically and administratively, to have been relatively successful, and have provided much work in the forests as well as an opportunity to keep our own cellulose industries fairly busy manufacturing cellulose for cattle wood food, and alcohol. The heavy reduction of private building operations in our country has to some extent been compensated by direct or indirect armament work, and by the deliveries of pre-fabricated wooden houses to our war-ravaged neighbors Finland and Norway. Conditions have been worse for the mechanical pulp mills and some of the paper mills. Towards the end of the year the prospects of increased sales southwards, and also to the western continental countries, of wood, cellulose, and paper, improved.

"Even though 1940 has been very troublesome for our forest industries, and for the whole population, we have cause to rejoice that Sweden has so far escaped the hard fate of many other nations, and has retained her national independence without sacrificing the highest values of all. The will of our people to national freedom and independence has in the past year found many unmistakable expressions, and one of them is certainly the force and resolution with which the men of our forest industries have adapted themselves to the altered conditions.

Pulp

● "In this, the last number of our journal this year, we will try briefly to review the 1940 pulp market as seen through Swedish eyes.

"The year started under rather unfavorable conditions. The war, which had then lasted four months, and the various blockade and control measures of the belligerents, had deteriorated the sales prospects. The risks to shipping had become exceedingly great, since mines, torpedoes, and seizures had towards the end of September made the trade war much more ruthless. Freights and insurance premiums had accordingly risen excessively, and the production costs of the pulp industry had gone up owing to higher prices of coal, chemicals, and other supplies. Nevertheless, the Swedish pulp industry had succeeded in keeping its shipments going fairly extensively, although a more than normal proportion of the cargoes had to be loaded on the west coast. Towards the end of the year some vessels captured by the Germans in November and December when carrying pulp to the U. S. A. had been released on receipt of guarantees that the goods would not be reshipped to the western powers.

"During the first months of the year the unusual severity of the winter, the ice impeding navigation in the Baltic and the Sound, the German mine fields up to the three mile limit off Falsterbo, were some of the factors compelling the shipment of the pulp exports almost exclusively over Swedish and Norwegian west coast ports. The transport facilities to these ports were therefore greatly strained, more especially as some Finnish exports were also being sent by the same routes.

"These conditions were reflected in the price movements of the early months of the year. At the New Year of 1940 bleached sulphite for paper was quoted at about 220 to 240 kronor, strong sulphite at 175 to 190 kr., kraft sulphate at 125 to 135 kr., and wet mechanical pulp at 50 to 55 kr. per ton f.o.b. east coast ports (kronor equals $.2385). These quotations were gradually raised, and had by the end of March reached 320 to 335 kr. for bleached sulphite, 250 to 275 kr. for strong sulphite and 200 to 225 kr. for kraft pulp f.o.b. The heavy transport costs made that the c.i.f. prices became very high to west European and overseas buyers, who in many places found the prices of Swedish pulp almost prohibitive. The return obtained by the sellers on the f.o.b. prices hardly left any margin of profit for the manufacturers, however, as the costs had successively increased with the product prices. Mills that were favorably situated in respect of transports were the only ones to benefit from the higher prices during the period.

"The German occupation of Denmark and South Norway on April 9th completely changed the situation of the Swedish exporters. Our westward routes were blocked, and the sales of the pulp industry were suddenly restricted to the markets at home, round the Baltic, and in certain parts of the continent. Events on the western front in May and June temporarily paralyzed all pulp exports except to Germany, and to some extent to Italy. When the war operations in the west were concluded, and the transport routes again gradually opened to commercial traffic, negotiations for a resumption of exports to various continental countries could be opened in the summer and autumn. In view of the general situation, these negotiations had to be undertaken primarily between the governments, resulting in trade agreements which, as far as the pulp and paper shipments were concerned, were implemented by the respective branch organizations of the several countries.

"Towards the end of June an agreement was thus reached between Sweden and Germany for pulp shipments to the latter country, and quotas were fixed for sulphite, sulphate, and a small quantity of mechanical pulp. The quotas for chemical pulp were considerably larger than the normal Swedish exports to Germany, but in relation to the capacity of the Swedish pulp industry they hardly came to more than one month's production. On the whole, they have all been delivered, in spite of initial difficulties in procuring the requisite tonnage etc.

"Side by side with these negotiations with Germany, the question of shipping pulp to the Dutch, Belgium, and French paper industries was also discussed. But the possible quantities were fairly small —and had moreover to be shared out between the suppliers of Scandinavia, Germany, and Slovakia—and the difficulties of transport and payment also proved serious obstacles. It was thus only possible to arrange for rather small shipments to Holland and Belgium, and for practically none at all to France.

"Fortunately considerable quantities of pulp—mainly rayon sulphite—could be exported to Italy without much difficulty.

"The efforts made to ship pulp to Spain were not very successful. Compensation business had been contemplated, but even at the end of the year little progress had been made, which is hardly surprising considering the difficulties and high costs of transport. Incidentally, large exports to Spain are hardly conceivable in view of the strained finances of that country after three years of civil war.

"The difficulty of finding means of paying for imports is also making the purchase of pulp hard for some other countries, which might otherwise need fairly large quantities of that commodity. Denmark, for instance, has been in the habit of importing some 25,000 tons of cellulose and 5,000 tons of wet mechanical pulp. Hungary and the Balkan countries are other examples, but even under normal conditions they do not consume any large quantities of Swedish pulp.

"The Swedish government and pulp industry, however, are incessantly striving to find opportunities of increasing

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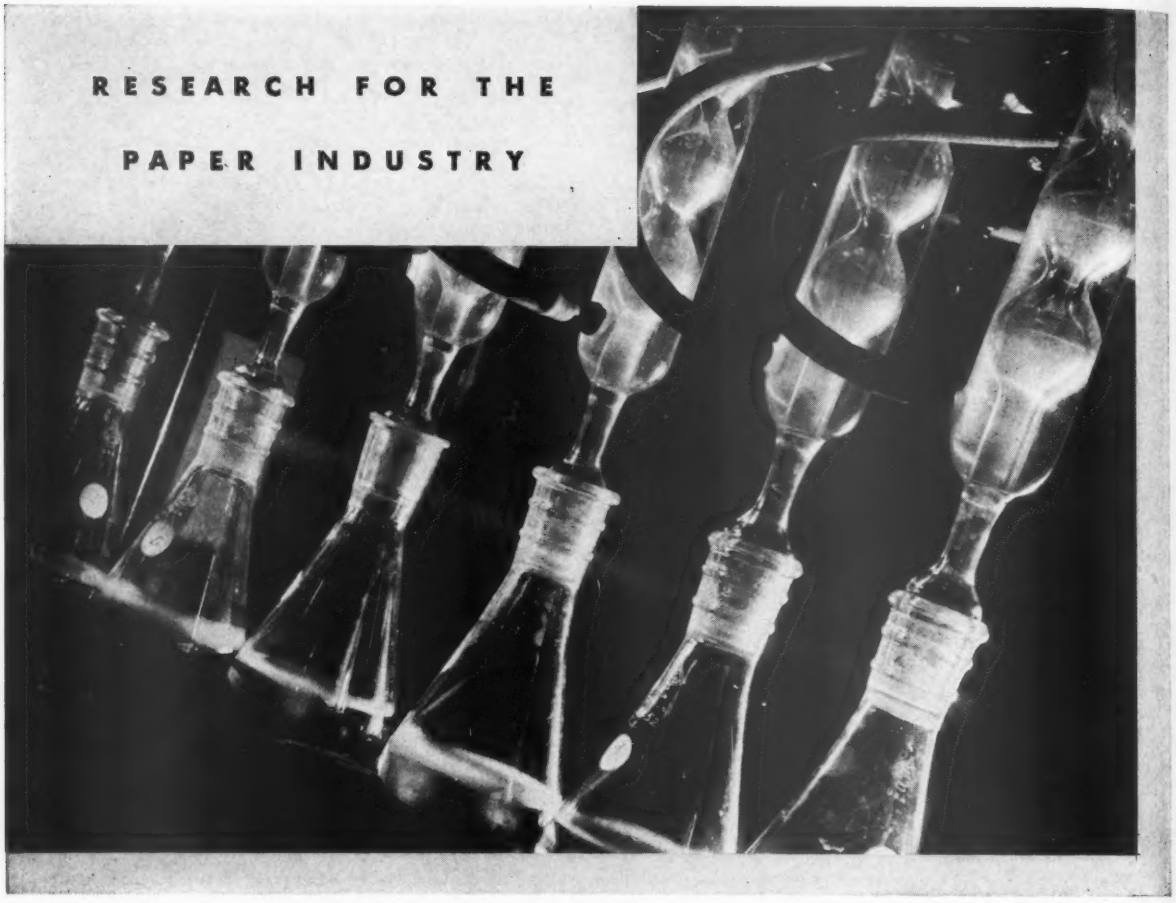

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PM-79

our exports, and now, towards the end of the year, a number of partly preliminary trade agreements have been made for 1941 or part thereof with various countries—e. g. Germany, Italy, and Denmark—in all of which a prominent place is given to the products of our forest industries, among them pulp.

"The efforts made to establish, with the consent of the belligerents, even limited shipments to our old overseas markets have so far met with no success, which is very unfortunate from the point of view of regaining in our future exports to the United States.

"There remains another market for our products—the home market. Like the pulp industry, the Swedish paper industry has had its exports radically restricted, and this has reduced the home consumption of pulp. The sulphite industry, however, has had the openings for its products somewhat extended by agreements with the government for the production of cellulose for cattle food; these agreements are financially and technically coupled with the manufacture of wood alcohol as a motor fuel, a product which is very badly needed during the present shortage of petrol.

"At the turn of the year the Swedish pulp industry can look back on a period of great difficulties and troubles. Nor does the future look particularly promising, failing a fairly speedy end to the world conflict. Until that happy event the industry must try every available path in expectation of the time when international trade will again be free—at least more free than it has been during the war.

"No statsitics of the production and sales of the Swedish industries have been published since October 1939, but nevertheless it is possible to say that our output and exports of cellulose have both been strongly reduced, and that the mills have considerable stocks of chemical pulp on hand. Practically all exports and production for sale of wet mechanical pulp have been at a standstill since Sweden was cut off from her important customer countries in the west in April; stocks can hardly be large anywhere, more especially as wet pulp cannot be stored for any length of time without deteriorating.

Sweden's Future Pulp Prospects

● Mr. Torsten Hernod, managing director of The Swedish Pulp Company, has on two different occasions spoken on Swedish prospects for regaining her forest products export business after the war.

Speaking February 20th before the Norrland Students' Club at Uppsala, Sweden, on the future prospects of the forest industries, Mr. Hernod was quoted by The Swedish Wood Pulp Journal as saying, " The necessity of adjusting the production to the available supplies of wood no longer permitted a quanitative extension of the industrial output. The efforts at qualitative development of the products, and the attempts to create new and profitable enterprises by more extensive processing of the raw materials, are becoming of increasing importance. The intensification of forestry, and extended research in arboriculture and wood chemistry, are other tasks which must also be included in the work of our forest industries."

Again, speaking at the opening of Forestry Week early in March, Mr. Hernod said, as quoted by The Swedish Wood Pulp Journal.

● "Industry must survey its problems, not only in the light of present events, but also with a view to the future. And industry is convinced that, taking the long view, further development will necessitate not only the full utilization of our present raw material resources, but also the taking of every chance of extending the basis of raw materials, and of promoting conditions favorable to the Norrland forest industries.

"The countries of the world are finding it no easy task to adapt themselves for increased self-sufficiency in respect of forest products. What has been done, and is being done, is largely no more than an acceptance of the shortage of forest products, and an adjustment to it by control and reduction of consumption in the importing countries, or by the utilization of their own forest resources to an extent which can only create increased import requirements after the war. True, the United States—our largest customer of chemical pulp and largest but one of paper—are in a special position in this respect.

"The U. S. A. have large forest resources of their own, which now, when their imports from Scandinavia and Finland are cut off, are increasingly drawn upon by the building of new pulp mills. But our sulphate pulp is of different quality to that made in the States, and will therefore probably after the present war be able to recapture much of its lost market. But, above all, the paper consumption in the United States is still rising strongly. The whole world consumption of paper is also increasing, and pulp is moreover being used for an increasing number of purposes. The manufacture of artificial silk, and in recent years of cell wool, is expanding amazingly. In respect of the latter, progress has been almost explosive.

Finally, as regards wood, it is but natural to think that the present world-wide ravages must eventually, when the war is over, be replaced by reconstruction, which will mean a huge demand for wood goods. Considering that all industrial activities are aimed at incerased production and improved qualities, and that forest products are our most important ob·ect of international trade, our present and future task must be to find ways and means to maintain the position which our labors have gained us in the world market. Scientific research has now in all countries been put to the service of utility production. and in a small country like ours, which is so dependent on our exports of industrial forest products' increasing in value instead of decreasing when times aagin become normal, the support and successful promotion of that scientific research must be of the most vital importance."

The Swedish Pulp Company is made up of 15 affiliated companies, producing in normal times 305.000 metric tons of sulphite pulp. 40.000 metric tons of rayon pulps; 340,000 metric tons of sulphate pulps; 170,000 metric tons of mechanical pulp; 40,000 metric tons of newsprint; and, 200,000 standards of wood goods.

What Sweden Hears About The U. S. Pulp Situation

● In a dispatch early this year the New York correspondent of The Swedish Wood Pulp Journal wrote in part,

"Many pulpmills here are naturally speculating about the part the Scandinavian (including Finnish) pulps will play in the future on this market. All agree more or less that these pulps will always be imported to U. S. A. but probably not on the same big scale as was the case up to the present War. The consumption here will certainly continue to grow but this country will naturally be turning out constantly bigger and bigger quantities of pulps, also of higher grades, to meet the increased demand. Not all Scandinavian pulps may be easily substituted with domestic qualities, but it is natural that big efforts will be made here to keep at least all foreign low-grade pulps out of this market as long as possible. One day U. S. A. may too limit the pulp import as much as possible to only high grade pulps, for which then the Scandinavian exporters should obtain good price on account of the absence of competition from domestic pulps. An important point is however the possibility of a duty being put on all imported pulps in reply to a price cutting policy that might be adopted in trying to reconquer this market for foreign pulps. It is not expected that such a proposal, if introduced in Washington, will any more be met with the same resistance as before from certain paper mills which in the past were amongst the biggest consumers of foreign pulps.

"The other day a paper mill, that had consumed regularly big quantities of Swedish and Finnish pulps said they may not go back to foreign pulps any more, as long as they can cover their requirements so conveniently and satisfactorily as at present with domestic pulps.

"It is interesting to note that this problem about foreign pulps in the future is often discussed although nobody can tell yet when it may be really actual."

While We Are On the Subject of Statistics

● Eva Manolin of Emeryville, Calif., employe of The Paraffine Cos.. Inc., for 22 years, holds what may be the world's record for pasting labels.

On the first day of her employment, right after the close of World War I, Miss Manolin affixed 1000 labels to as many Pabco products. She has been doing it ever since.

Altogether, she has probably pasted about 5,545,000 labels. Laid end to end, they would reach from the Oakland plant to Little Rock, Ark.

Japan's Pulp Production Below Schedule

● Japan's production of wood pulp is falling far short of levels set in the five-year plan formulated three years ago. According to that plan, domestic output of paper and rayon pulp would amount in 1939 to 1,423,000 long tons, increased to 1,507,000 long tons in 1940.

On the basis of reports from pulp producers, the authoritative Japan Timber Journal states that 1939 actual production amounted to 1,079,000 tons and estimates 1940 production at 1,174,000 long ton.

Shortages of electric power and coal in 1940 were severe handicaps to Japanese wood pulp producers, augmented by the scarcity of construction materials which has retarded many of the projects for establishing n e w factories. — American Commercial Attache, Tokyo.

Latin American Countries Important Buyers in 1940

Bought Wood Pulp From U. S. Producers Amounting to 92,030 tons Worth $5,472,000 in 1940, Compared with 4,707 tons Worth $213,000 in 1938—The Six Largest Purchasers of Paper and Paper Products Bought $10,000,000 Worth in 1940 Compared with $5,600,000 Worth in 1939.

THE Latin American countries were good customers of the United States pulp and paper industry in 1940, buying nearly five and one half million dollars worth of wood pulp and well over ten million dollars worth of paper and paper products.

United States exports of wood pulp, all grades, to all Central and South American countries in 1940, amounted to 92,531 short tons valued at $5,484,337, as compared with exports of 4,707 short tons exported to the same countries in 1939 valued at $213,000.

The increase in 1940 in tonnage was 87,824 tons or 1,865.6 per cent and the increase in value was $5,271,337 or 2,474 per cent.

The exports of paper to the six principal buyers south of the Rio Grande increased $4,402,133 or 78.6 per cent in value last year over the $5,596,859 value of the 1939 exports.

This sudden jump in demand for United States pulp and paper products by the countries of Central and South America was due, of course, to the blockade of the Baltic and the resulting eliminations of shipments from Sweden, Norway and Finland. Germany, normally an important supplier of paper to South America, was unable to ship in any quantity during 1940.

In 1937, a typical pre-war year, two-thirds of the wood pulp consumed in South America was supplied by Sweden, and an additional 25 per cent was supplied by Finland, Germany and Norway in approximately the order of importance named. About 90 per cent of the 1937 wood pulp requirements of South America in 1937 came from Europe. A little over 2 per cent was imported from the United States and slightly more than 4 per cent from the United States and Canada combined. The war, then, caused a complete realignment of the pulp situation for South America.

The paper problem for the South American countries was similar to the wood pulp problem as regards dependency upon European sources.

During the year 1937 for example, 18.5 per cent of South American paper imports came from Finland; 17.5 per cent from Sweden; 14 per cent from Norway; and 11.5 per cent from Germany, a total of 47.5 per cent from the three countries. Before the war the United States supplied but 4.3 per cent of the South and Central American paper requirements.

Brazil, Argentina and Chile have paper industries of their own but are still large importers of foreign produced paper, while the balance of the countries of Central and South America must import all of the paper and paper products consumed.

It will be noted from the table that Argentina, the largest South American buyer of United States paper and paper products, imported products valued at $3,321,282 in 1940 as compared with products valued at $1,061,934 in 1939 and $687,226 in 1938. Cuba, the second largest, buyer of paper and paper products in 1940, took $2,423,129 worth in the past year as compared with $1,921,674 worth in 1939 and $1,789,551 worth in 1938. Mexico, in third place in 1940, took paper and paper products valued at $1,641,131 last year, $1,008,135 worth in 1939 and $840,639 worth in 1938.

Columbia, in fourth place last year, bought paper and paper products valued at $1,410,096 in 1940; $556,041 in 1939 and $499,280 in 1938. Venezuela, in fifth place in 1940, took paper and paper products in the value of $909,699 last

EXPORTS OF PAPER
FROM THE UNITED STATES TO SIX LATIN AMERICAN COUNTRIES
1938-1939-1940

Country:	1940		1939		1938	
	Pounds	Value	Pounds	Value	Pounds	Value
Argentina[1]	44,886,114	$3,321,282	12,299,913	$1,061,934	7,739,279	$687,226
Cuba	40,133,863	2,423,129	35,560,557	1,921,674	35,342,388	1,789,551
Mexico[2]	20,937,793	1,641,131	13,621,970	1,008,135	14,871,735	840,639
Columbia[3]	17,284,446	1,410,096	3,821,386	556,041	4,778,984	499,280
Venezuela	7,242,602	909,699	6,185,308	777,586	3,697,928	446,911
Brazil	3,165,267	293,655	3,991,307	271,489	3,169,310	262,796
Totals	133,650,085	$9,998,992	75,480,441	$5,596,859	69,599,624	$4,526,583

Source: Bureau of Foreign & Domestic Commerce, U. S. Department of Commerce.

[1]Includes value of 1,813,793 square feet of fiber insulating board valued at $58,269 in 1940; 2,014,940 square feet valued at $62,258 in 1939; and 2,017,048 square feet valued at $62,895 in 1938.

[2]Includes value of 1,362,058 square feet of fiber insulating board valued at $41,377 in 1940; 1,080,550 square feet valued at $38,823 in 1939; and 718,102 square feet valued at $29,218 in 1938.

[3]Includes value of 106,598 rolls of wall paper valued at $9,810 in 1940; 37,058 rolls valued at $3,346 in 1939; and 24,491 rolls valued at $2,498 in 1938.

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Blake, Moffitt & Towne
General Paper Company
Sierra Paper Company
Zellerbach Paper Company

OAKLAND
Blake, Moffitt & Towne
Union Paper Company
Zellerbach Paper Company

SAN JOSE
Blake, Moffitt & Towne
Zellerbach Paper Company

SACRAMENTO
Blake, Moffitt & Towne
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STOCKTON
Blake, Moffitt & Towne
Zellerbach Paper Company

FRESNO
Blake, Moffitt & Towne
Zellerbach Paper Company

SAN DIEGO
Blake, Moffitt & Towne
General Paper Company
Zellerbach Paper Company

LONG BEACH
General Paper Company
Sierra Paper Company
Zellerbach Paper Company

PHOENIX
Blake, Moffitt & Towne
Zellerbach Paper Company

TUCSON
Blake, Moffitt & Towne
Zellerbach Paper Company

EUREKA
Zellerbach Paper Company

DENVER
The Carter, Rice & Carpenter Paper Company

PORTLAND
Blake, Moffitt & Towne
Zellerbach Paper Company

SALEM
Blake, Moffitt & Towne

EUGENE
Zellerbach Paper Company

SEATTLE
Blake, Moffitt & Towne
Zellerbach Paper Company

TACOMA
Standard Paper Company
Tacoma Paper and Stat'ry Co.

RENO
Zellerbach Paper Company

WALLA WALLA
Snyder-Crecelius Paper Co.
Zellerbach Paper Company

SPOKANE
Blake, Moffitt & Towne
B. G. Ewing Paper Company
John W. Graham & Company
Spokane Paper & Stationery Company
Zellerbach Paper Company

YAKIMA
Zellerbach Paper Company

BOISE
Blake, Moffitt & Towne
Zellerbach Paper Company

SALT LAKE CITY
Zellerbach Paper Company

HONOLULU, T. H.
Honolulu Paper Co., Ltd.
Patten Company, Ltd.

MANILA, P. I.
J. P. Heilbronn Company

SHANGHAI, CHINA
Cosmos Paper Co.

AUCKLAND, N. Z.
Brown & Stewart, Ltd.

AUSTRALIA
B. J. Ball, Ltd.—Sydney
Melbourne—Brisbane

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LOS ANGELES

NEW YORK OFFICE
70 PINE STREET
NEW YORK CITY

year; $777,586 in 1939 and $446,911 in 1938. Brazil, in sixth place last year, bought paper and paper products worth $293,655, in 1939 $271,489 worth and in 1938 $262,976 worth of these commodities.

"How much of this increased business the United States can hope to hold following the cessation of hostilities, no one knows," wrote James B Studley, chief, pulp and paper section, forest products division, Bureau of Foreign & Domestic Commerce, an article titled, "Recent Developments in the Pulp and Paper Industry Due to the War."

"Should Germany win the war and establish a system of barter and exchange, as many believe she would do, we would look to the loss of most of this pick-up in foreign markets for paper. Should England win, we would probably be able to hold at least some of the increased South American trade."

The following data, the latest available, was supplied to PACIFIC PULP & PAPER INDUSTRY by the Bureau of Foreign & Domestic Commerce. Although incomplete, it will serve to provide a general picture of the paper and board industry in Argentina, Brazil and Chile.

Production in Argentina

● A report issued by the Direccion General de Estadistica of Argentina on November 16, 1939, gives the number of paper and board mills in operation as 31 with an output of 87,120 short tons of paper and 24,138 short tons of paperboard during the calendar year 1938. Production, according to class, was divided as follows:

	tons
Book paper	18,188
Writing paper	5,538
Wrapping paper	52,896
Caps and linings	3,005
Toilet paper	1,442
Other paper	6,051
Total	87,120
Paper board	24,138
Converted products	6,566
Total paper board and manufactures	117,824

Consumption of paper base stocks by the mills during the year 1938 was as follows:

	tons
Chemical pulp	45,872
Mechanical pulp	15,020
Old paper	68,168
Other waste	1,572

The Argentine paper and board mills are largely dependent upon imported raw materials. There is but one company in the country producing pulp. This is the Celulosa Argentina, Sociedad Anonima. The company produced during 1938 a total of 17,086 tons of pulp from straw. At a second plant located near the delta of Rio de la Plata they produced approximately 2,700 tons of chemical wood pulp. Imports of wood pulp, both chemical and mechanical, during 1938 amounted to 42,465 short tons.

EXPORTS OF WOOD PULP FROM THE UNITED STATES TO LATIN AMERICAN COUNTRIES 1940

Country:	Tons	Value
Brazil	32,907	$1,931,909
Mexico	29,484	1,691,031
Argentina	14,035	924,337
Chile	9,620	618,684
Cubs	2,625	112,532
Peru	2,307	135,639
Uruguay	668	48,707
Venezuela	271	20,117
Costa Rica	165	1,105
Columbia	3	276
Total	92,531	$5,484,337

Production in Brazil

● The number of paper mills in operation in Brazil in 1939 was reported by the American Vice Consul at Rio de Janeiro as 33 plants with an aggregate productive capacity of 147,700 short tons. Production by the 28 plants in operation in 1938, the latest year for which detailed statistics are available, was 117,600 short tons divided as follows:

Wrapping paper	56,538
Writing paper	17,147
Book printing paper	17,197
Other printing papers	7,821
Toilet paper	1,922
Cigarette paper	431
Other paper	6,197
Total	107,254
Paper board	10,363
Total paper and board	117,617

The principal paper base stocks now utilized by the paper and board mills of Brazil consist of mechanical pulp, unbleached sulphite pulp and rags. A few mills use rice straw, bamboo and various vegetable fibers as raw materials. However, the largest source of paper base stock in Brazil is the Parana pine, which flourishes in the three southernmost states although the trees are not of homogeneous quality. Only three mills are equipped with the necessary machinery to manufacture chemical pulp. A number of other mills have mechanical pulp equipment and many depend in whole or in part upon imported pulp. Domestic production of wood pulp is estimated at approximately 94,800 short tons a year and at least an equivalent amount is now being imported. The average annual imports for the five-year period 1934 to 1938, inclusive was 90,617 short tons. Of these imports it is estimated that 70 per cent consisted of unbleashed sulphite pulp, 20 per cent of mechanical pulp, and 10 per cent of miscellaneous types.

Imports of chemical pulp into Brazil in 1940 totaled 575,000 metric tons, according to the Monitor Mercantile of Brazil. Imports during 1939 amounted to 532,000 metric tons. The trend in Brazil at present continues to be to establish or expand local industries to supply the market with goods formerly imported from Europe. Among other new projects is the wood pulp plant in Southern Parana region which will produce both chemical and mechanical pulp.

The Brazil Trade Journal in its first issue, volume 1, number 1, April 1941, published by the Federal Council of Foreign Trade, had the following to say concerning Brazil's pulp and paper industry and imports:

"The Bank of Brazil recently conceded a credit of 60,000 contos-de-reis to the "Industrial Klabin do Parana, S/A" for the installation of a factory to manufacture newsprint paper in the northern section of the state of Parana. Parana, as is known, is the largest producer of pine in Brazil.

"The total amount involved in the enterprise is 85,000 contos and will be subscribed by the Bank and by the Klabin firm, the loan of the former being guaranteed by the

Instinctive-like, I duck behind my Safety Factors book in self protection

"...if this is Hay, I'll EAT it!"

I was visiting a paper mill, just to renew cold acquaintances (my competitors already bein' in there solid), when whambo, I get this:

"Look at these embossing roller bearings — burned out again! That's what we get for listening to a lubrication specialist! 'Specialists!'— that's a lotta hay!"

Instinctive-like, I duck behind my Safety Factors book in self protection. And what d'you suppose happens then?

If that doggone engineer don't grab my book right outta my hands... and start readin' about SAFETY FACTOR NUMBER TWO.

Well, I'm gettin' his business *now* — and his bearing troubles are over. It's wonderful what Shell's Safety Factors will do — and that ain't hay.

Your Shell Salesman

P. S. When I SHOW YOU my book, you can see for yourself how Shell's Safety Factors can help you reduce wear, or increase power offtake, or control friction or combustion heat, or save on shutdown losses, or save on your outlay for lubricants.

forest lands of the latter which are valued at about 100,000 contos.

"Previous plans of this firm place the probable annual output at 80,000 to 90,000 tons of pulp and cellulose with the production based on the some six million trees of more than a foot in diameter and the availibility of 35,000 HP of hydraulic energy. In general, four cubic meters of dry pine yield one metric ton of cellulose while 2.3 cubic meters are sufficient for the pulp.

"There are, at present, two pulp factories of significance in operation in Brazil, one in Sao Paulo based on the use of the pine and eucalyptus of Sao Paulo and Minas Gerais with an output of 900 to 1,200 tons of pulp annually and the other in Parana which produces pulp and cellulose from the pine of that state, of which, they have more than 1,000,000 trees. The capacity of the latter, based on the data of an industrial census in 1938 is 9,200 tons annually, 1,800 of which is for cellulose and 7,400 for pulp. Production in that year, however, was 1,700 tons of cellulose and 6,700 tons of pulp or about 91 per cent of full capacity. Another factory of much smaller scale is located in Estado do Rio and according to the same census has an output capacity of 400 tons of cellulose annually with production for that year totalling 300 tons.

"It may be noted that the trend in imports of pulp and cellulose into Brazil have been distinctly on the decrease, the quantity in 1937 having been 100,000 tons and only 61,000 tons in 1940. Production remains in the vicinity of 100,000 tons having been 106,702 metric tons in 1938. There is thus a tendency towards the domestic production of the raw material no small part of which may be attributed to the use of old paper, waste cloth and rags. The consumption of the latter by some 27 firms in Brazil is estimated to be about 600,000 tons annually."

Production in Chile

● There is only one relatively large paper mill in Chile. This plant has a productive capacity estimated at 37,400 short tons per year distributed as follows:

Newsprint	15,400
Wrapping paper	11,200
Writing and book paper	10,800

Two other small paper mills in operation have a combined capacity estimated at 2,000 short tons and a fourth which was completed during the summer of 1940 has an annual capacity of 3,300 tons, bringing the total annual capacity of Chilean paper producing mills to 42,700 short tons. Chile's annual paper consumption is estimated at 35,300 short tons. Thus with the completion of the plant at Valdivia the domestic mills when operated at capacity will be able to produce 7,400 tons of paper above domestic requirements. In addition to the paper mentioned above, Chilean mills have been producing about 4,000 tons of paper board annually, a figure which can be increased should conditions warrant.

The mill first mentioned produces from 6,600 to 7,700 tons of bleached straw chemical pulp a year and between 17,600 and 19,800 tons of mechanical pulp. Reports concerning the productive capacity of the plant under construction at Valdivia are very conflicting. The company claims that within a few years they will not only produce all of Chile's chemical pulp requirements but will have a surplus for export. It is believed that this is a decidedly extravagant prediction and other sources are of the opinion that at the outset the plant will not be able to produce more than 2,000 tons a year for its own consumption.

Local paper mills are forced to import approximately 10,000 tons of sulphite pulp per year of which about one-half is bleached. Imports of unbleached sulphate are believed to have amounted to some 4,000 tons in the past year (1938). It is not possible to break down the imports into classes of pulp as all pulp is included in Chilean statistics under the heading of "Mechanical or Chemical pulp, undyed, for the manufacture of paper or explosives." Imports in 1938 amounted to 15,000 short tons.

The American Commercial Attache in Santiago, Chile, sent in the following report in January of 1941:

"Domestic production of newsprint was only 100 metric tons higher in 1940 than in 1939. The only mill producing newsprint reported an output of 10,700 tons of both newsprint and magazine paper, of which 9,000 tons were in rolls and 1,700 tons in sheets. Imports during 1940 slightly exceeded those for the preceding year, reaching 10,344 tons. For the first time in many years the United States ranked first in the list of supplying

SOUTH AMERICA

Number of Plants Manufacturing Paper and Paperboard

	Pulp		Paper and Paperboard		
	Year for which reported	Number	Year for which reported	Number	Capacity
Argentina	1938	2	1938	31	Unknown
Bolivia	1939	none	1939	1	600
Brazil	1939	[1]	1939	40	147,700
Chile	1940	2	1940	4	46,700
Colombia	1940	none	1940	1	5,000
Ecuador	1939	none	1939	none	
Guianas		none		none	
Paraguay		none		none	
Peru	1939	none	1939	4	7,500
Uruguay	1939	[2]	1939	3[3]	11,200
Venezuela	1940	none	1940	2	Unknown

[1]No definite information; 3 mills are equipped with machinery for manufacturing chemical pulp. A few others are reported to have mechanical pulp equipment.
[2]Projects for 2 new pulp mills reported in 1939.
[3]Industrial Census of 1936 reported 43 establishments. Only 3 seem to be manufacturing paper and board, others probably converters: 2 new plants reported to be contemplated in 1939.
Source: Bureau of Foreign & Domestic Commerce, U. S. Department of Commerce.

SOUTH AMERICA
Production of Viscose Filament Yarn and Staple Fiber

	1939 (Last year available) Viscose Yarn Pounds	Staple Fiber Pounds
Argentina	5,220,000	None
Brazil	2,809,000	200,000
Columbia	220,000	None
All others in Central and South America	None	None

countries, and Sweden was a close second. Canada continued to lose ground, imports from that source having declined steadily since 1937, when they amounted to 9,576 tons. It is reported that no recent importations of newsprint have come in from Scandinavian or other European countries, but official statistics are lacking.

"According to reliable estimates, the country's annual consumption of newsprint is in the neighborhood of 16,000 metric tons, of which about 13,000 are consumed by dailies and the remainder by magazines. Stocks on hand are considered normal, and on the basis of the above figures would have been around 5,000 tons on January 1, 1941."

U. S. Supplied Over Half China's 1940 Paper Imports

● The total imports of paper and paper products into Shanghai during the calendar year 1940 were valued at 11,651,835 customs gold units (about $7,891,200 in U. S. currency), it was reported by the American Consulate General in that city. The United States supplied 55 per cent of this trade, Canada 14 per cent, and Japan 11 per cent.

The war in Europe has made it impossible to obtain adequate paper supplies from Germany and the Baltic countries which formerly supplied most of the paper market in China, and Shanghai has come to rely upon the United States, Canada and Japan as its main sources of supply.

Canada leads in supplying newsprint and other cheap printing paper. Total imports of such paper in 1940 were valued at 2,118,926 customs gold units, of which 56 per cent came from Canada and 22 per cent from the United States. Canada and United States also compete in the market for kraft paper; Canada supplied 30 per cent of total imports valued at 667,172 customs gold units in 1940 and the United States supplied 64 per cent. The United States supplied 92 per cent of the total 1940 imports of drawing, document, bank note, and bond paper, valued at 612,256 customs gold units.

Despite rigid Government restrictions on Japan's export trade, that country continued to supply a considerable part of Shanghai's paper needs, especially of cigarette paper, coated or enameled paper, packing and wrapping paper (other than kraft), parchment, glassine, and greaseproof paper. Since Japanese prices are much lower than United States prices, the actual amount of paper imported from Japan is considerably greater than is indicated by the total value.

Paper Industry 11th In Value of Products

● The Census of Manufactures for 1939 revealed that the manufacture of paper and allied products stood in 11th place of all industry in the United States in value of products with a value of $2,019,568,217.

The production of paper and allied products was carried on in 1939 in 3,279 plants by 295,784 employees who received $394,725,295 in wages and salaries. The cost of materials, etc., and contract work amounted to $1,149,666,420. The value of the products was $2,019,568,217 and the value added by manufacture totaled $869,901,797.

The ten industries exceeding paper in value of products in 1939 in order from first to tenth, were: food and kindred products; iron and steel and their products, except machinery; automobiles and equipment; textile mill products and other fibre manufactures; chemicals and allied products; apparel and other finished products made from fabrics and similar materials; machinery, except electrical; products of petroleum and coal; printing, publishing and allied industries; and, non-ferrous metals and their products.

Washington's Share of National Forest Receipts

● "A warrant on the U. S. Treasury for $208,142.25 will be sent to Washington's state treasurer to cover the state's share of the receipts from the national forests for fiscal year 1940," reports Lyle F. Watts, regional forester, Portland. "This represents 25 per cent of the gross receipts. That is about $84,000 more than last year's contribution. It will eventually go to the county road and school funds.

"An additional $83,256.90 has been turned over to the region to build and maintain roads and trails in Washington's national forests," said Watts. "That represents another 10 per cent of the 1940 receipts.

"The forest receipts in Washington, which amounted to well over $800,000, are considerably greater than those from any other state. In Oregon the receipts were about $660,000; in California, about $600,000. As private timber holdings are depleted and as forest service sales increase, these receipts may be expected to supply a substantial part of the revenue for counties in which national forests are located. Very few of these forests are being cut to their capacity. Estimates indicate that for the next hundred years they could supply an annual yield of about one billion board feet.

"Expenditures by the Forest Service in Washington during the last fiscal year for all purposes were $3,217,737.28. This includes the forest highways appropriation, forest protection, grazing, timber, wildlife, recreation, watershed and other land management activities."

Paper Made From De-Inked Stock Found Stable

● Recent experiments by the National Bureau of Standards on de-inked book stock are of interest because of the present consideration being given to the reuse of more waste paper to amplify pulp supplies.

The Bureau recently tested the stability of paper made in its experimental mill from 100 per cent de-inked book paper stock of ordinary wood-fiber grade, made in a commercial mill. The paper was heated for 72 hours at 100 degrees Centigrade, and tested for retention of folding endurance, which is the practice commonly employed by the Bureau in testing for stability of papers. The retention of folding endurance was 93 per cent, which indicates unusually good stability as papers made from virgin wood fibers of similar grade generally show a retention of 70 per cent or less.

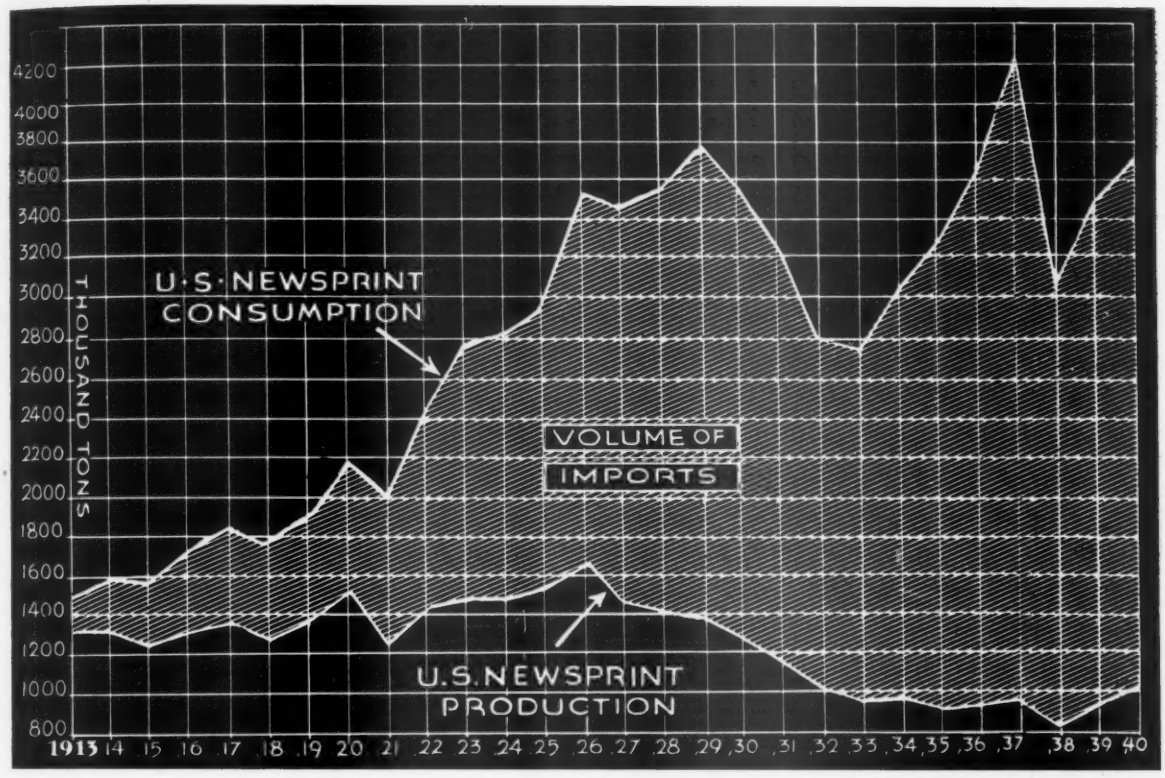
Furthermore, the cellulose had an alpha-cellulose value of 80 per cent and a copper number of 2, which are indicative of greater cellulosic purity than that commonly found for the virgin wood fibers. Apparently the mild alkaline treatment used in de-inking the waste paper had a purifying effect on the cellulose of the fibers, with improvement of their stability. De-inked paper stock of this kind is generally used in book papers, in admixture with virgin fibers, for improved printing quality.

EXPORTS OF NEWSPRINT FROM UNITED STATES

(Tons)

Source—U. S. Department of Commerce

Country—	1937	1938	1939	1940
Europe	172	.....	134	233
Canada	64	.....	290	11
Central America	1,479	925	1,859	1,140
Mexico	52	.....	159	942
Cuba	4,634	1,570	1,342	1,857
South America	4,403	941	1,676	5,635
China and Japan	3,869	.....	4,364	10,993
Philippine Islands	1,720	883	3,220	11,246
Other Countries	665	1,326	685	11,853
Total	17,058	5,645	13,729	43,910



FOR IMMEDIATE RELEASE

April 28, 1941

U. S. DEPARTMENT OF COMMERCE
Bureau of the Census
Washington

CURRENT STATISTICAL SERVICE

CELLULOSE PLASTIC PRODUCTS

March 1941

Statistics on production, shipments, and consumption in reporting company plants of cellulose plastic products for the month of March 1941 were released today by Acting Director Virgil D. Reed, Bureau of the Census, Department of Commerce. The data for shipments and production of nitrocellulose and cellulose acetate sheets, rods, and tubes, and the consumption of these in reporting company plants were reported by 10 manufacturers. The data for shipments and production of cellulose acetate molding compositions were reported by 8 manufacturers for the months of 1941 and the months of 1940, 7 manufacturers for January 1939, and 8 manufacturers for February to December 1939. The data represent practically the entire industry.

PRODUCTION, SHIPMENTS, AND CONSUMPTION IN REPORTING COMPANY PLANTS (POUNDS)

Year and month	NITROCELLULOSE							CELLULOSE ACETATE				
	SHEETS		RODS		TUBES		Sheets, rods, and tubes consumed in reporting company plants	SHEETS, RODS, AND TUBES 1/			MOLDING COMPOSITION	
	Production	Shipments 2/	Production	Shipments 2/	Production	Shipments 2/		Production	Shipments 2/	Consumed in reporting company plants	Production	Shipments 3/
1941												
January	719,336	704,497	349,402	329,136	97,794	78,760	185,024	616,525	674,574	7,066	1,631,502	1,563,885
February	780,173	755,513	314,560	299,793	97,399	89,831	230,041	441,482	502,025	8,951	1,878,807	1,641,978
March	844,819	794,199	363,429	348,026	99,345	96,298	248,980	464,501	372,804	10,169	2,231,630	1,990,982
Total (3 months)	2,284,328	2,254,209	1,027,391	970,955	294,538	264,889	664,045	1,522,508	1,549,403	26,186	5,741,939	5,216,845
1940												
January	878,316	749,002	291,806	275,316	66,702	56,805	271,041	857,277	751,429	9,144	1,176,726	1,023,808
February	725,107	594,261	246,298	257,399	46,797	66,759	185,863	636,834	655,076	7,052	971,892	877,695
March	789,307	607,267	231,297	256,511	69,036	61,739	212,155	550,138	586,516	12,044	1,103,977	1,021,579
Total (3 months)	2,390,730	1,950,530	769,401	788,226	184,535	185,303	669,059	2,044,249	1,995,021	28,240	3,252,595	2,923,072
April	532,327	561,119	245,078	231,937	74,649	55,106	174,304	556,358	490,206	18,188	950,717	903,785
May	544,352	645,921	188,938	228,296	67,056	56,211	171,446	702,385	648,535	9,717	893,374	837,151
June	535,226	567,953	169,982	203,560	64,756	58,536	212,194	633,808	562,223	5,506	870,562	682,095
July	680,067	679,766	156,643	210,930	62,413	64,158	167,801	564,729	407,830	7,552	896,860	777,367
August	610,141	670,897	208,565	246,200	71,455	52,445	168,366	772,928	783,686	7,018	1,422,936	1,341,994
September	736,372	745,068	256,678	282,714	100,236	86,636	279,525	826,246	754,786	8,025	1,708,803	1,501,465
October	748,779	767,010	248,364	273,758	99,236	95,183	246,662	983,292	944,361	9,055	1,925,720	1,783,259
November	641,258	730,384	306,670	308,659	92,766	94,958	207,355	934,006	1,036,674	4,536	1,606,095	1,410,496
December	715,240	701,298	302,198	273,840	91,819	93,060	183,278	867,234	733,014	7,666	1,435,149	1,317,382
Total (year)	8,154,492	8,039,940	2,852,477	3,038,218	908,321	842,578	2,479,979	8,887,237	8,356,336	105,503	14,962,813	13,478,044
1939												
January	641,575	685,139	233,530	220,464	48,284	50,809	242,280	896,122	885,778	6,409	725,438	682,482
February	712,212	698,393	267,790	230,625	49,293	48,273	256,846	988,719	1,014,295	8,586	871,362	770,006
March	917,274	818,229	311,893	290,064	85,841	62,749	342,458	1,077,560	1,029,302	14,340	962,864	809,718
Total (3 months)	2,271,061	2,201,761	813,213	741,153	203,418	161,831	841,584	2,962,401	2,899,375	29,355	2,559,664	2,262,206
April-December	7,280,487	6,752,679	2,188,184	2,278,013	616,809	601,999	2,634,642	6,178,506	5,943,392	89,103	9,095,284	8,318,136
Total (year)	9,551,548	8,954,440	3,001,397	3,019,166	820,227	763,830	3,476,226	9,140,907	8,842,767	118,458	11,654,948	10,580,342

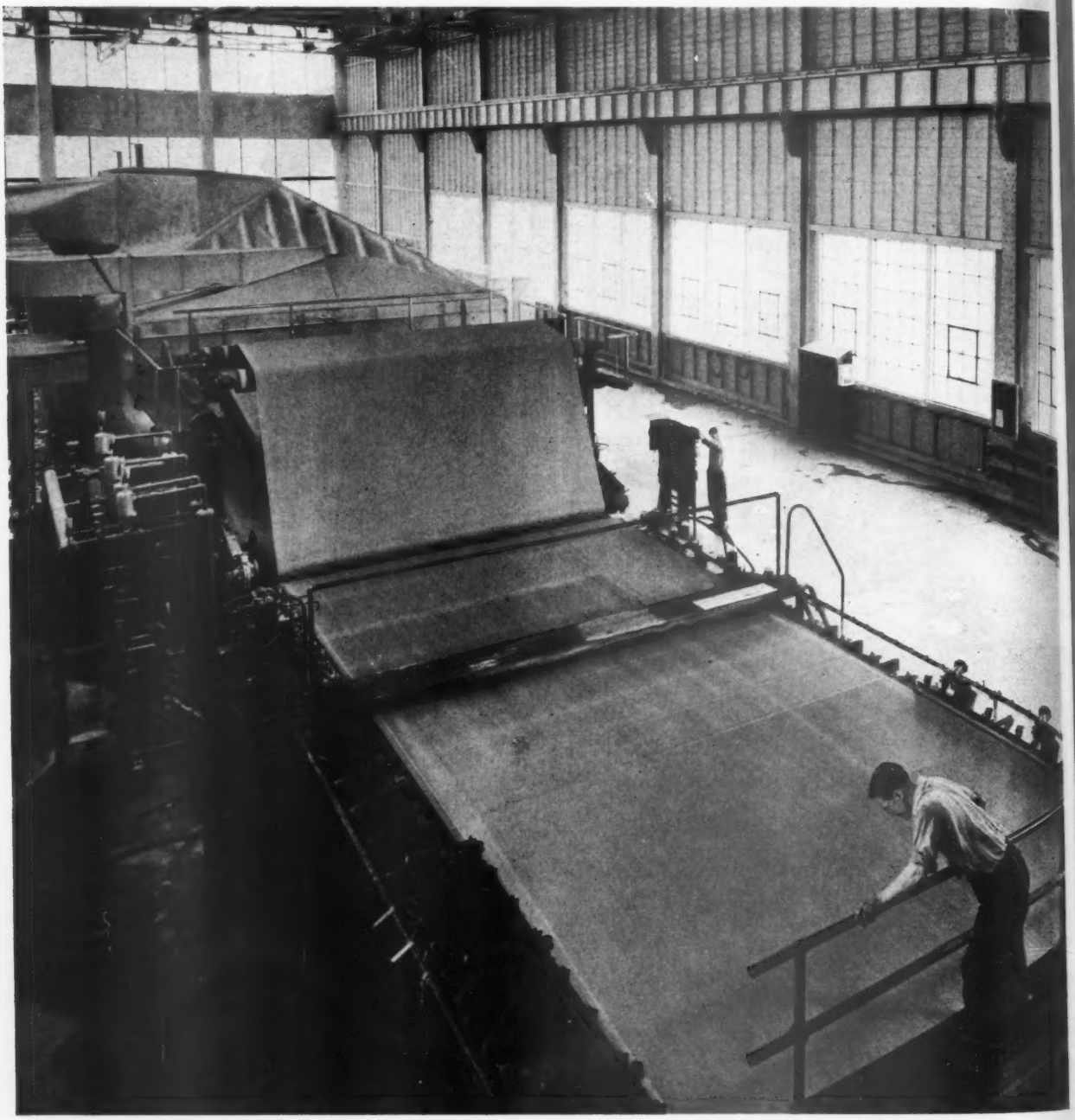
1/ Beginning with February 1941 data does not include production or shipments of cellulose acetate safety glass sheets.
2/ Includes consumption in reporting company plants.
3/ Excludes consumption in reporting company plants.

American Publishers' Stocks Of Newsprint Decline in March

● Stocks of newsprint in the hands of American publishers declined during March, as consumption of the paper increased over the level of March, 1940. Manufacturers' stocks rose, but not enough to offset the substantial decline in publishers' holdings. On the first of March, 421 newspapers reporting to the American Newspaper Publishers' Association held 284,799 tons of newsprint. During March they received 227,422 tons, used 258,518 tons and sold 847, to leave stocks on hand at the end of the month of only 252,856 tons. There were also in transit to publishers 44,312 tons to make total stocks on hand and in transit of 297,168 tons, which was equivalent to 36 days' supply at the March consumption rate.

Manufacturers' stocks at the end of March were 279,439 tons, an increase of 19,860 tons. Compared with the end of March, last year, publishers' stocks were up 12,213 tons, but manufacturers' stocks were off 30,017 tons, to leave a net decline for the 12 months of 17,804 tons. Manufacturers' stocks on March 31 this year were the lowest since the end of March, 1937, when they stood at 267,830 tons.

March newsprint consumption by reporting publishers was 2.9% above March last year, and 12.4% over March, 1939. The gain for the first three months this year was 3.2%.



Courtesy Crown Zellerbach Corporation.

A MODERN PACIFIC COAST PAPER MACHINE ▪ ▪ ▪ **No. 11 paper machine in the mill of the Crown Willamette Paper Company, Division of Crown Zellerbach Corporation, Camas, Washington.**

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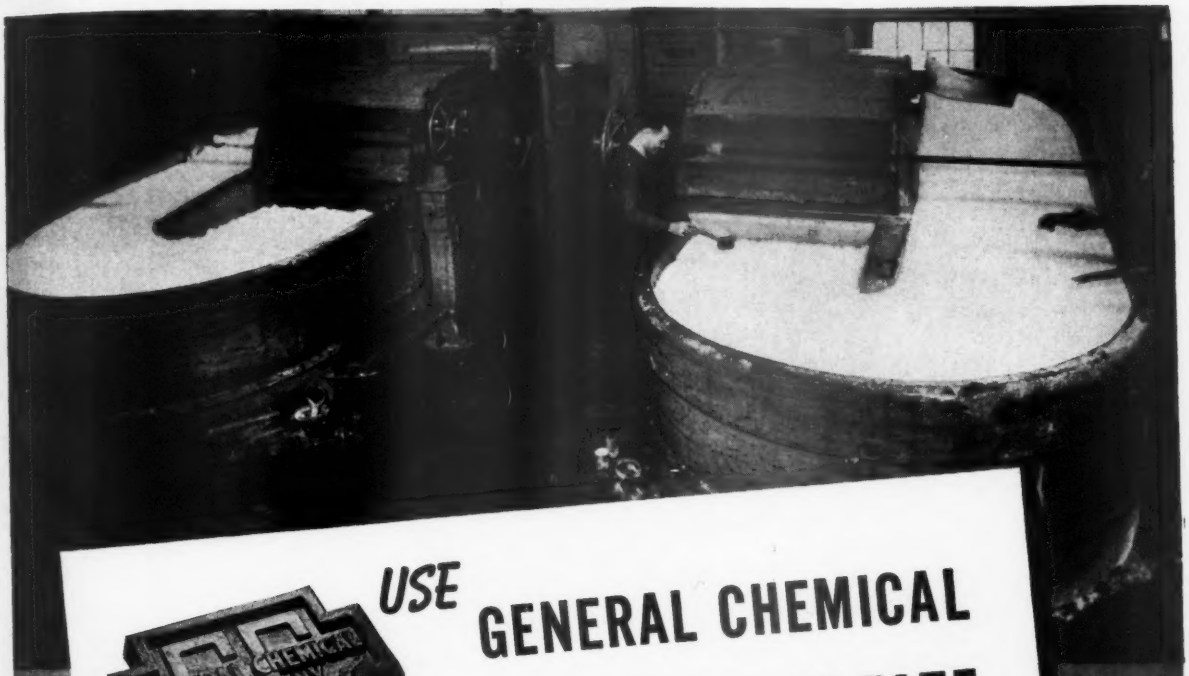

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Quality paper depends to a large extent on the quality of the chemicals used in making it. General Chemical Aluminum Sulfate—either the Standard or Iron Free grades—assures quality in your paper from the start . . . through carefully controlled manufacturing standards that insure uniform quality and concentration and a low percentage of impurities.

GRADES

Standard—Ground—99% thru 8 mesh, 95% thru 10 mesh

Iron Free—Ground—thru 8 mesh

General Chemical Company is equipped to supply your needs from a nearby plant, or from any of the number of General Chemical distributing stations conveniently located from coast to coast.

Other General Chemical products for the paper industry include:

Aluminum Sulfate, Iron Free
Crystal Alum Potassium
Muriatic Acid, Commercial and C. P.
Sulfuric Acid, Commercial and C. P.
Nitre Cake
Salt Cake
Sodium Bisulfite, Anhydrous
Sodium Fluoride
Sodium Hyposulfite
Sodium Sulfite, Anhydrous
Tetrasodium Pyrophosphate
Trisodium Phosphate

GENERAL CHEMICAL COMPANY

WESTERN SALES OFFICES:

Wenatchee—3 Benton St. Yakima—P. O. Box 1468
San Francisco—400 Sansome St.
Los Angeles—1031 S. Broadway
Denver—Osage St. & West Bayaud Ave., P. O. Box 97, Denver Sta.
Vancouver, B. C.

GENERAL CHEMICAL COMPANY
Send to the office nearest you, as shown at the left.

Gentlemen: Kindly send me a copy of the General Chemical Products Book. I am also interested in.....

Name.....

Company..... *Position*.....

Address.....

City..... *State*..... PP-541

The Pacific Coast Industry Offers a Large Variety of Products

As the market grows the variety of pulps, papers, paperboards and converted products manufactured in the region continue to expand—This list is presented as a service to the industry and to its customers.

A

THE ADHESIVE PRODUCTS CO., INC.
San Francisco

Products
- Gum Sealing Tape
- Bookbinders' Gummed Hollands
- Stay Tape
- Veneer Tapes
- Corrugated Box Tapes
- Industrial Adhesives

●

ANACORTES PULP COMPANY
Anacortes, Wash.
(Wholly owned subsidiary of the Scott Paper Co., Chester, Pa.)

Products
- Unbleached Sulphite Pulp

●

ANGELUS PAPER EXCELSIOR PRODUCTS CO.
Los Angeles

Products
- Adding Machine Paper
- Cash Register Paper
- Tabulator and Teletype Paper
- Addressing and Listing Papers
- Ticker Tape
- Serpentine
- Other Roll Paper Specialties
- Paper and Wood Excelsior
- Paper and Wood Furniture Pads
- Embossed Chip Board
- Pipe and Tire Wraps

B

BARTRAM PAPER PRODUCTS CO., LTD.
Vancouver, B. C.

Products
- Bag Specialties
- Candy Bags
- Cellophane Bags
- Coffee Bags
- Garment Containers
- Glassine Bags
- Greaseproof Specialties
- Grocery Bags
- Laundry Bags
- Millinery Bags
- Shopping Bags
- Notion Bags

●

BATES VALVE BAG CORPORATION
Converting Plants at Seattle, Washington; Emeryville and Los Angeles, California

Products
- Multi-wall Paper Valve Bags
- Multi-wall Paper Bags (open-mouth)
- Cement, Lime and Plaster Bags, etc.
- Sugar and Flour Bags
- Chemical Bags
- Moisture-proof Bags, etc.
- Valve Bag Filling Machines, Open-Mouth Bag Closing Machines

●

J. E. BERKHEIMER MFG. CO.
Tacoma, Wash.

Products
- Saturating Felt
- Building Paper
- Deadening Felt
- Roofing materials
- Composition shingles
- Asphalt
- Wavy Siding
- Brick Siding

●

BRITISH COLUMBIA PULP & PAPER CO., LTD.
Office, Vancouver, B. C.
Mills, Port Alice and Woodfibre, B. C.

Products
- Bleached Sulphite Pulp
- Wood Cellulose for Cellophane and Rayon Manufacture

●

BROWN PAPER GOODS CO. OF CALIFORNIA
Los Angeles, San Francisco and Seattle

Products
- Glassine and Allied Bags
- La Fold Napkins
- Cocktail Napkins
- Retail Pkgs. Sandwich Bags

C

CALIFORNIA CONTAINER CORP.
Emeryville, Calif.
Los Angeles, Calif.
(Western Container Company)
Seattle, Wash.
Portland, Oregon

Products
- Corrugated Fibre Containers for All Commodities—
  - Fruit and Vegetable Canners Cases
  - Frozen Food Shipping Cases
  - Egg Cases
  - Dried Fruit Cases
  - Baby Chick Boxes
  - Corrugated Fruit Packing Supplies
  - Apple Boxes
  - "Fruit Cradles," "Wrapaks"

●

CALIFORNIA-OREGON PAPER MILLS
Division of Columbia River Paper Mills
Los Angeles, Calif.

Products
- Wrappings—
  - Manila, kraft and sulphite
- Tissues—
  - White and colored
- Fruit Wraps—
  - Oiled, plain and printed
- Waxing Papers—
  - Plain and printed
- Vegetable Parchment
  - Plain and printed
- Specialties

●

CAPITAL ENVELOPE CO., LTD.
Los Angeles

Products
- Envelopes, commercial and special
- Glassine Bags, plain and printed

●

CARPENTER ENVELOPE COMPANY
Division of Carpenter Paper Co.
Los Angeles
Manufacturers

Products
- Complete line of Envelopes

●

CENTRAL FIBRE PRODUCTS CO.
(Formerly Colorado Paper Products Co.)
Denver, Colo.

Products
- Manila Vat-lined Box Boards
- Book Vat-lined
- News Vat-lined
- Test Liner
- Test Chip
- Pasted Chip
- Pulp Wall Boards
- Container Stocks
- Sheathing
- White Blanks
- Colored Folding Box Boards
- Set Up Box Boards
- Plain Chip, Rolls and Sheets

CERTAIN-TEED PRODUCTS CORP.
Richmond, Calif.

Products

Roofings—
- Mineral Surfaced Shingles
- Mineral Surfaced Roll Roofings
- Smooth Surfaced Roll Roofings

Felts and Building Papers—
- Asphalt felt, 15, 20 and 30 lb.
- Asphalt sheathing
- Tuftite Kraft Sheathing
- Blue pasterboard, 30 and 60 lb.
- Deadening felt, ¾, 1 and 1½ lb.
- Sheathing paper, 20 and 30 lb.
- Asbestos—cement siding
- Unsaturated felt and building papers

Lining Felt—
- Brands

Shingles—
- 15" Thick Butt
- 12" Thick Butt
- Cut-Out
- Waverly
- Hexagonal
- Universal
- Mul-T-Form
- Individuals
- Dutch Lap
- Saf-T-Lok, French Lock
- Certain-teed, Beaver Vulcanite

Roll Roofing—
- Diamond Point, Blockedge
- Split Sheet, Super Certain-teed
- Certain-teed, Guard
- Certain-teed Structural Insulation Board
- Certain-teed Hard Board
- Densewood Products
- Genuine Beaver Board
- Bestwall Plaster Board

•

CHASE BAG CO.
Portland, Ore.

Products

Burlap Bags
Cotton Bags
"Saxolin" Open Mesh Paper Bags
Crinkled Paper Bags and
Barrel Liners

•

CLARKSBURG PAPER CO.
Oakland, Calif.

Products

Boxes—Shipping, Corugated, Fibre

•

COAST ENVELOPE AND LEATHER PRODUCTS CO.
Los Angeles

Products

Envelopes
Book Covers
Leather Goods

•

COLUMBIA RIVER PAPER MILLS
Vancouver, Wash.

Products

Wrappings—
- Bleached and Unbleached butcher and Sulphite wrapping paper

Fruit Wraps—
- Citrus and deciduous, oiled, plain or printed

Bleached and Semi-Bleached Wrapping tissues
White and Colored Napkin Tissue
Bleached Specialties
Sulphite Bonds
Envelope
Writings

•

CONTINENTAL BAG SPECIALTIES CORP. and ONEIDA PAPER PRODUCTS, INC.
Los Angeles

Products

Cellophane Bags—
- Flat
- Square
- Satchel Bottom (FUL-LOK)

Cellophane Envelopes—
Coffee Bags, Flavo Fresh
Glassine Bags—
- Flat
- Square

Glassine Envelopes, Open End
Ice Cream Bags
Window Bags—
- Self-Opening with full-length (strip) window
- Self-Opening with die-cut window
- Flat & Square—
  - Full-face window
  - Partial face (strip) window

Waxed Bags—
- One Side
- Two Sides
- Pre-printed

Catalog Envelopes, Open End
Kraft Bags, Miscellaneous except Grocery
- Flat
- Square

Flavo-Fresh Sandwich Bags
Sani-San Sandwich Bags
Kleenway All-Purpose Bags
(For consumer re-sale)

•

COOS BAY PULP CORPORATION
Empire, Oregon
(Wholly owned subsidiary of the Scott Paper Co., Chester, Pa.)

Products

Unbleached Sulphite Pulp

•

CROWN MATCH COMPANY
Los Angeles

Products

Paper Book Matches

•

CROWN WILLAMETTE PAPER COMPANY
Division Crown Zellerbach Corporation
Camas, Wash.; West Linn, Ore.; Lebanon, Ore.

Products

Towels—
- Alfibre—Senior, Junior and Midget (folded)
- Alfibre—(Roll)
- Aristocrat, 2-ply (folded)
- Krafspun—Senior, Junior and Midget (folded)
- Crown Kraft—Midget (folded)
- Radiant—(Roll)
- Milady Household Roll Towells

Courtesy California Container Corp.

APPLE BOX of corrugated board with wood superstructure cradles apples and eliminates flat spots and bruises in shipment ✓ ✓ ✓ Produced by the CALIFORNIA CONTAINER CORPORATION of Emeryville, which has the sole rights, the new box won an award for the Rainier Fruit Co., Yakima, Washington, and the Yakima Fruit Growers Association in the Shipping Containers Group of the All-America Package Competition.

Bakers Bags—
Crown Satina Sulphite Bread Bags
Crown Bleached Satina Sulphite Bread Bags

Bleached Sulphite Wrapping—
Crown Snowfibre, M. F.
Crown Damask Alfibre, M. G.

Butcher Papers—
Crown Alpine Meat Wrap—S. F. White Full Bleached
Crown Meat Wrap—S. F. Natural
Crest Meat Wrap—S. F. or W. F. Natural
Crest Butcher Fibre—W. F. Mottled, Natural
Crest Moistite Butcher—Dry Finish (Natural), Pink, White
Crest Veribest Butcher—S. F. Pink
Premium Meat Wrap—Pink

Citrus Tissues — Plain and Printed
Crown Citrus

Colored and Striped M. G. Sulphite Wrapping—
Crown Damask Alfibre—M. G. wide stripe
Crown Whitefibre—M. G. narrow stripe

Commercial Wrapping Tissue—
Crown Snowtex Tissue — Full Bleached White
Crestex No. 1½ Tissue—Unbleached White and Manila
Crest Du Plex Tissue—M. G. Unbleached White
Lustex Tissue—M. G. Full Bleached White

Converting Kraft—
Crown Grocery Bag Paper
Crown Envelope Kraft
Crown Gumming Kraft
Crown Asphalting Kraft
Crown Waxing Kraft

Drawing Manila—
Crown Drawing Manila

Envelope Manila—
Crown Envelope Manila

Excelsior Paper—
Crown Tissue Excelsior

Fruit Papers —Plain and Printed—
Crown Satina Fruit Wrap
Crown Alfibre Fruit Wrap
Crown Bleached Alfibre Fruit Wrap
Crownoil Unbleached Alfibre Fruit Wrap
Crownoil Unbleached Alfibre Fruit Wrap
Crown Copperized Alfibre Fruit Wrap
Crown Tomato Wraps—M. G. or M. F.—Pink, White or Manila
Crown Cantaloupe Wrap—Treated Pink or Manila

Grocery Bags—
Crown Kraft—S. O.
Otter, Reliance, Eagle—S. O.
Monarch—Striped M. F. Kraft—S. O.
Shamrock Kraft—S. O. Green
Bee—Unbleached Sulphite—S. O.
Commander Kraft—Sq.
Pure Fibre—(Unbleached Sulphite) —Sq.
Snowfibre — Bleached Sulphite — S. O.

Gummed Tape—
Crown Flash Tite Sealing Tape

Kraft Wrapping—
Crown XX Kraft, Brown, M. F. Plain
Monarch Kraft, Brown, M. F. Striped
Crown Kraft—Natural Brown, M. F. Plain
Crown Kraft—Silvertone Gray, M. F. Plain
Crown Damask Kraft — Natural Brown, M. G. wide stripe
Crown Damask Kraft — Silvertone Gray, M. G. wide stripe
Crown Satina Kraft—Natural Brown, M. G. narrow stripe
Crown Satina Kraft — Silvertone Gray, M. G. narrow stripe

Manifolding Paper—
Crown Manifolding Tissue

Mill Wrappings—
Crown Mill Wrapper

Napkins—
Embossed, Genuine Crepe, Semi-crepe, Full Bleached Napkins
Fixture and Special-fold Napkins
Package Napkins — Full Bleached and colors

Newsprint—
Standard News (rolls)
Commander News (sheets)
Crown Printers Roll News
Crown Printers Sheet News
Crown Flat-bed Sheet News
Crown Pink, Green and Peach News

Odd Bags—
Crown Carbon Black Bags
Crown Banana Bags
Crown Notion Bags
Crown Millinery Bags
Crown Garment Bags
Crown Liquor Bags
Crown Barrel Bags
Crown Poultry Bags
Crown Super Bags
Crown Nail Bags
Crown Confectionery Bags
Crown Laundry Bags
Crown Shopping Bags

Roll Toilet Tissue—
10-Lb. Fourdinier Tissue—650-1000 and 2000 count
10-Lb. Fourdrinier Tissue—1000 and 200 count
10-Lb. Fourdrinier Notched Oval Tissue — 400 count — 7 and 8-oz. rolls
12-Lb. Full Bleached Tissue—1000 count
12-Lb. Unbleached — Semi-crepe —650 count
16-Lb. Unbleached — Semi-crepe— 4-5-6-7 and 8-oz rolls
Full Bleached Genuine Water Crepe —6-7-8 oz. rolls
Semi-Bleached Genuine Water Crepe —6-7-8-oz. rolls

Specialty Bags—Plain and Printed—
Crown Raisin, Prune, Peach and Fig Bags

Raisin Tray—
Crown Sunbeam Raisin Tray

Salesbook Manilas—
Crown Salesbook Manila

Sulphite Box Liners—
Crown Water Crepe Box Liners —Pink, Blue and White
Crown Machine Crepe Box Liners—Pink, Blue and White
Crown Uncreped Box Liners—Pink, Blue and White

Sulphite Wrapping—
Crown Manila
Crown Alfibre
Crown Grocerwrap

Tire Wraps—
Crown Tire Wraps

Waxing Sulphite
Crown Opaque Bread Wrap
Crown Bleached Waxing Sulphite

Waxing Tissue—
Crown Snowtex Waxing Tissue
Crestex Waxing Tissue

Waxed Papers—
Crown Waxfibre
Alpine Waxfold
Crest Waxfibre
Florist Tissue

Waterproof Paper (Laminated)—
Crown Laminated Kraft

●

CROWN WILLAMETTE PAPER CO.
Division Crown Zellerbach Corporation
Los Angeles

Products

Self-opening Grocery Bags (Otter Kraft)
Fruit Wraps, plain and printed
Napkins
Embossed Semi-crepe, Full Bleached Napkins
Fixture and Special-fold Napkins
Package Napkins—
Full Bleached and Colored

●

CROWN ZELLERBACH CORP. NATIONAL PAPER PRODUCTS CO. DIVISION
Port Townsend, Wash.

Products

.016 Kraft Liner Board
.030 Kraft Liner Board
.016 to .038 Suit Box Board
Cement Bag Paper
Grocery Bag Paper
Sack Paper
Kraft Wrapping Paper

●

D

DIXIE-VORTEX CO.
Los Angeles, Calif.

Products

Paper Water Cups
Paper Soda Cups
Paper Ice Cream Cups and Containers
Cellophane-Wrapped Packaged Paper Cups

●

E

EL REY PRODUCTS CO.
Los Angeles

Products

Asphalt Roofing
Asphalt Slate Surfaced Shingles
Composition Shingles

Saturated Lining Felt
Saturating Felt
Deadening Felt
Red and Gray Duplex Sheathing
Car Linings
Industrial Floorings
Dry Felts
"Metalic" Surfaced Roofing

●

ENVELOPE MANUFACTURING CO.
Los Angeles

Products

All types of Envelopes

●

EVERETT PULP & PAPER CO.
Everett and West Tacoma, Wash.

Products

Book Papers—
- Everett English Finish Book, White, India, Yellow, Blue, Pink, Green, Orange
- Nautilus E. F. Book, White
- Everett Melody E. F. Book—White only
- Everett Melody Super Book—White only
- Symphony E. F. Book, White
- Symphony Super Book, White
- Masterpiece Book White
- Everett Publication Book
- Everett Super Book, White, India
- Nautilus Super Book, White

Everett Melody E. F. Book—White only
Everett Melody Super Book—White only
- Everett Art Book (English Finish) White, India
- Everett Monastery Text (Eggshell), White, India
- Nautilus Eggshell, White
- Anchor E. F. Book, White
- Binnacle E. F. Book, White
- Ensign E. F. Book, White
- Everett Super Rotogravure, White
- Everett Soap Wrapper (Alkali Proof), White
- "Hard-Wear" Catalog White
- Everett Non-Fading Poster, White, Orange
- Everett White Wove Envelope
- Everett Printing Manila — (Printcraft)
- Everett Blanking Paper—White

Label and Lithographic Papers
- Litho Poster, White
- Everett M. F. Label, White—
- Everett Super Label, White—Regular
- Everett Super Label, White—B Finish—Regular
- Everett Super Label, White—B Finish—Tub Sized

Offset Papers—
- Biplane Book (No. 1 Offset) White—Tub Sized
- Twinphase Book (No. 2 Offset) White—Tub Sized
- Everett No. 3 Offset—White

Writing Papers—
- Everett Railroad Writing (O. P. S.) White, Amber, Blue, Pink, Green
- Everett Penmanship Writing (M Grade) White
- Everett No. 4 Opacity Bond, White Canary, Buff, Blue, Pink, Green, Goldenrod
- Everett No. 5 Capstan Bond, White, Buff, Blue, Pink, Green, Goldenrod
- Everett Stadium Bond, White, Canary, Buff, Blue, Pink, Green, Goldenrod

Mimeograph Papers—
- Everett Signwell Mimeo (152X Hard Sized) Whte Wove, Blue, Pink, Canary, Buff, Green, Goldenrod
- Everett Laid Mimeo (Slack Sized) White, Blue, Pink, Canary, Buff, Green, Goldenrod
- Everett No. 4 Mimeo Bond (Hard Sized) White, Wove
- Pensign Laid Mimeo (Slack Sized) White
- Pensign Wove Mimeo (Hard Sized) White, Blue, Pink, Canary, Buff, Green, Goldenrod
- Binnacle Laid Mimeo (Slack Sized) White
- Binnacle Wove Mimeo (Hard Sized) White
- Everett Copiwell Papers (Duplicating Papers) 3 grades

Tablets and Stationery—
- Li-Rite Coil Wire Bound Notebooks, Composition Books, and Commercial Stationery
- Tablets, Pads, Composition Books, Notebooks and Fillers
- Opaque School Papers
- Drawing Papers
- White, Detail, Gray and Buff
- West Trade Commercial Stationery
- West Trade Filing Cards (White and Colors)
- West Trade Note Master
- West Trade Time Books
- West Trade Columnar Pads
- Loose Leaf Indexers

"NON-USERS ARE THE LOSERS"

50TH ANNIVERSARY

TENAX FELTS

50 YEARS OF SERVICE

Papermaking history was written in 1891 when we introduced TENAX FELTS. Throughout the succeeding fifty years constant research and experimental tests have kept them in the forefront as Leaders in producing perfect papers at low costs per ton.

Let TENAX FELTS point the way to greater 1941 profits in your mill.

"Non-Users Are the Losers"

LOCKPORT FELT COMPANY
NEWFANE, N. Y.

Pacific Coast Representative: ALAN C. DUNHAM, Portland, Ore.

Tru Line Wire o-Bound Line of Note Books, Composition Books, Filler Books, and Sketch Pads
Gray Bogus Paper
Artline Tru-Tone Poster and Construction Paper
Federal Reserve Perforated Pads
Adding Machine and Teletype Paper

F

FERNSTROM PAPER MILLS, INC.
Pomona, California

Products

Citrus Fruit Wraps—Treated and untreated, printed one and two colors of ink, M. G. and M. F.
Deciduous Wraps (Fruit and Vegetable)—Oiled and unoiled, printed and unpritned, copperized
Napkins—M. G. white menu
Department Store Tissue — Flat and quirefolded, M. F.
Laundry Tissue—Flat and quirefolded, M. G.
Bottle Wraps—Printed and unprinted
Waxing and other tissue specialties
Brands—"Pomona Brand" on foregoing
"Sage Hi-Cap" Plant Protectors
"Protecto" Toilet Seat Covers

●

FIBREBOARD PRODUCTS Inc.
Port Angeles, Sumner, Wash.
Los Angeles, Stockton, Antioch, Calif.
San Francisco

Products

Boxboards—
Boxmakers Grades
Tagboard
Bristol Board
Binders' Board
Kraft and Jute Liners
Corrugating, Rag, Straw and Sulphite Board

Paper Cans: Tubes—
Paper Cans
Coffee Cans
Special Cottage Cheese Cans
Drug Cans
"White-Tite" Cans
Double "White-Tite" Cans
Paper Caps and tin ends of all descriptions
Mailing Tubes
Telescope Mailing Tubes
Screw Top Mailing Cases
Kraft Tuck-end Mailing Tubes

Egg Packing—
6x6 Fillers
Egg Cartons, 3x4 and 2x6
"Cushion - Pak" Egg Cartons, 3x4 and 2x6
Egg Case Flats

Folding Cartons
Raisin and Dried Fruit Cartons
Fruit and Vegetable Packing
Fruit and Berry Baskets
Tea and Coffee Cartons
Cereal Cartons
Display Cartons
Frozen Food Cartons
Doughnut Cartons
Butter and Ice Cream Cartons
Miscellaneous Folding Cartons
"Pure-Pak" Milk Containers
"Tredonia" Bakery Packages

Corrugated Products—
Corrugated Rolls
Photo Mailers
"Super-Test" Corrugated Shipping Cases
"Levelbest" Canners Cases
Milk Cases
Coffee Cases
Beer Cases
Wine Cases
Glass Cases
Miscellaneous Cases
Cereal Cases
Butter Cases
Display Stands
Frozen Food Cases

Solid Fibre Products—
"Super-Test" Solid Fibre Shipping Cases
"Levelbest" Canners Cases
Fruit and Vegetable Cases
Cannery Cases
Dried Fruit Cases
Salmon Cases
"Re-file" Cases
Butter Cases
Miscellaneous Cases
Cereal Cases
Soap Cases
Liquor Cases
Hexagon Asphalt Drums

Pails—
Food Pails
Ice Cream Pails

Commodity Folding Boxes—
Cake Boxes
Laundry Boxes
Cake Circles
Candy Boxes
Florist Boxes
Clothing Boxes
Hat Boxes
Millinery Boxes
Collar Bands

Fruit Packing—
Berry Baskets
Liners—Corrugated and Chip
Pads—Corrugated and Indent
Collars
Fig Trays
Fig Partitions
Fruit Baskets
Peach Shims
Orange Shims
Basket Shims
Shims—Plain and Combination
Basket Circles
Tree Bands
Labels

●

FIELD-ERNST ENVELOPE CO.
San Francisco

Products

Printed and Plain Business Envelopes for mailing and filing

●

FIR-TEX INSULATING BOARD CO.
St. Helens, Ore.

Products

Insulating and Acoustical Board
Fir-Tex Building Board
Fir-Tex Ivrykote Board
Fir-Tex Finish Plank
Fir-Tex Insulating Lath
Fir-Tex Insulating Tile
Fir-Tex Refrigeration Insulation Blocks
Fir-Tex Roofing
Fir-Tex Hardboard
Firkote Sheathing

LLOYD A. FRY ROOFING CO.
Compton, Calif.
Portland, Ore.

Products

Asphalt Roll Roofing
Asphalt Slate Surface Shingles
Slate Roll Roofing
Rag Felt
Deadening Felt

G

GATES PAPER CO., LTD.
Los Angeles

Products

Round Fibre Cans
Mailing Tubes of all types
Paper Cores

●

GRAYS HARBOR PAPER & PULP CO.
Hoquiam, Wash.

Products

Sulphite Bonds
Envelope Posting Ledger
Mimeograph
Manila
Writing
Offset
Specialties

H

HAWLEY PULP & PAPER CO.
Oregon City

Products

Newsprint—
Standard Shade and Blue White Rolls and Sheets

Poster Paper

Drawing Manila—Standard Colors

Sulphite Wrapping—
Cheviot Wrapping in Blue, Green, Red, Tan and Grey
Cheviot Bristol in Eight Colors

Cheviot Book and Mimeo Paper in Eight Colors

Treated Cheviot Innerwrap
Cheviot Printrap in six colors
Cheviot Envelope Sulphite in four colors
Cheviot Litewrap
Meat Wraps in Bleached, Manila and Cheviot Colors
Grocers and Butchers Wrapping
Bakers Manila
Macaroni Papers
Treated Moistpruf Wrapping in natural white and colors

Sulphite Screenings

Corrugating Boxboard

Deciduous and Soft Fruit Wrappers

Tissue Paper, Unbleached

Unbleached Toilet Tissues in Rolls

Towels, Interfolded and Rools for Time - Controlled Towl-Craft Cabinets

Grocery Bags

Kraft Wrapping Paper, No. 1 and No. 2

Imitation Greaseproof Convertible Tissue

I

INLAND EMPIRE PAPER CO.
Millwood, Wash.

Products

Newsprint—
Rolls and Sheets
White, cream, colors
High Grade News—
Special halftone and magazine print
No. 1 Colored Poster
Mimeograph News—
Laid and wove
White and six colors
Sub. 16, 20 and 24
Coarse Papers—
Car Linings
Screenings
Ham Wrap
Sheathing
Bond—
No. 4 Bond in white and colors
Mimeo Bonds
Ledger—
No. 4 Ledgers
Book—
Eggshell Book
English Finish Book
M. F. Book
Envelope—
Fibretint Envelope
White Wove Sulphite Envelope
Wrapping—
Fibretint Wrapping
Empire Butchers Bleached
Butchers Sulphite
Fibretint Butchers
Butchers Manila
Sulphite and Groundwood Specialties—

J

THE JAITE COMPANY
Jaite, Ohio
Plants: St. Helens, Ore.
Wilmington, Cal.
Offices: San Francisco

Products

Multiwall Sewn Paper Bags

●

JOHNSON ENVELOPE CO.
San Diego, Calif.

Products

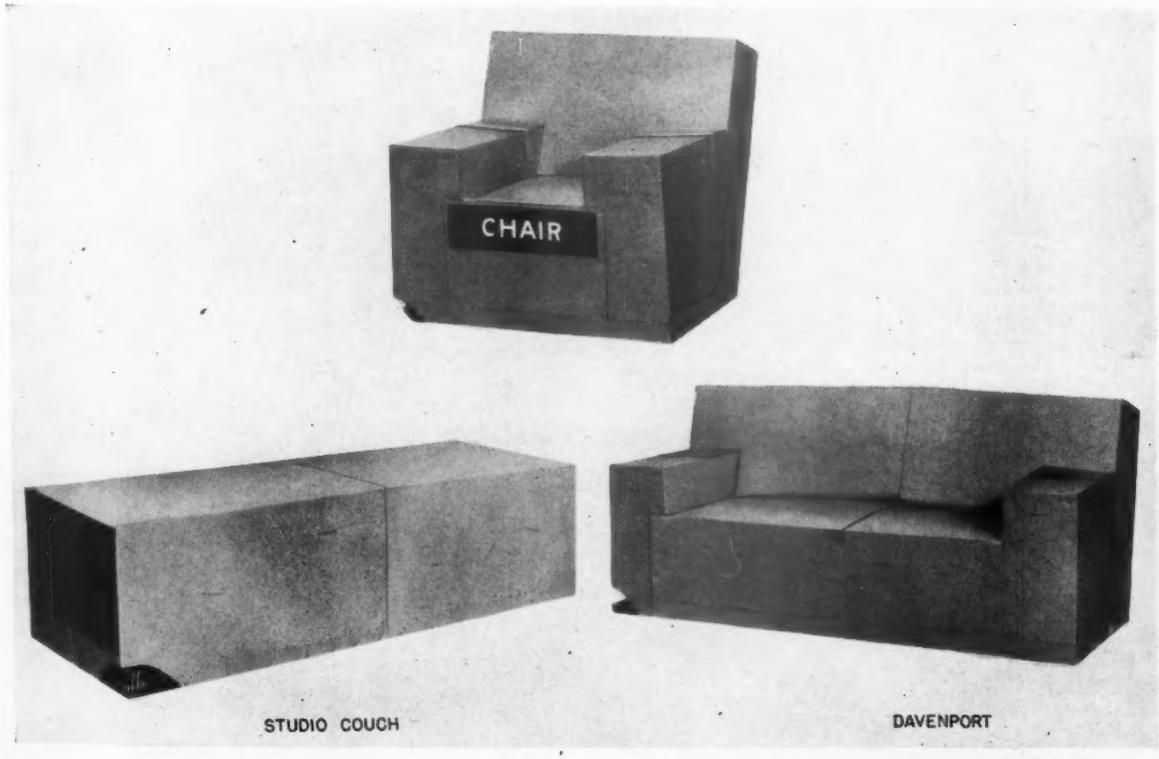
Catalog Envelopes
Expanding Envelopes
File Folders
Filing Envelopes
Mailing Envelopes
Merchandise Envelopes
Photo Mailers
Tag Envelopes

●

JOHNS-MANVILLE SALES CORPORATION
San Francisco

Materials Manufactured at Pacific Coast Factories

J-M Asbestos Shingles—
Dutch Lap, Hexagonal
No. 35 American Method
American Colonial (507)
J-M Asbestos Siding Shingles
Cedargrain
Texture Shingles
J-M Rock Wool Home Insulation
Type A—Loose Wool
Type B—Ful-Thik Bats
Type B—Semi-Thik Bats
J-M Roofing Materials
Built-Up Asbestos & Rag Felt Roofings
Asphalt Shingles
Smooth Surfaced Roll Roofings
Slate Surfaced Roll Roofings
Building Papers—Roofing Felts
Roof Coatings and Putties
J-M Industrial Building Materials
J-M Waterproofing Materials
J-M Celite for Concrete
J-M Power Products
Refractory Products
Miscellaneous Power Products
Transite Flue Pipe
Transite Pressure Pipe
Transite Sewer Pipe
Asbestos Paper
85% Magnesia Insulation
Low Pressure Insulations
High Pressure Insulations
Insulating Cements
Insulating Powders
Insulating Brick
Filter Aids & Mineral Fillers



Courtesy Fibreboard Products Inc.

"PRE-PACK" FURNITURE CARTONS have reduced shipping costs and give greater protection to the furniture ✓ ✓ ✓ Here are examples of the adjustable light weight corrugated container developed on the Pacific Coast ✓ ✓ ✓ Fully patented FIBREBOARD PRODUCTS INC., has exclusive manufacturing rights for the West.

L

LAMINATED PAPER BOARDS
San Francisco, Calif.

Products

Laminated Board and Specialty Paper Products

●

W. P. LASS COMPANY, INC.
Santa Cruz, Calif.

Sales Office, San Francisco

Products

Convert Paper into Floral Supplies—Pots and Vases

●

LILY-TULIP CUP CORPORATION
Crystal Division

Los Angeles

Products

Lily, Tulip and Gem Drinking Cups
Lily and Gem Soda Cups
Lily and Gem Carry-Out Cups
Crystal Drinking Cups
Crystal Souffle Cups
Crystal Water Bottle Caps
Lily and Gem Ice Cream Containers
Tulip Nestrites
Tulip Nestrite Tubs
Tulip Souffles
Lily, Tulip, Gem and Crystal Resale Packages

●

LONGVIEW FIBRE COMPANY
Longview, Washington

Products

Pulp

Western Hemlock Sulphate Pulp in Rolls and Sheets.

Sulphate Board

Cylinder Test Liner
Cylinder Non Test Liner
Fourdrinier Test Liner
Cylinder Corrugating Board
Fourdrinier Corrugating Board
Cylinder Boxboard
Kraft Liner for Wrapping Veneer Wallboard
Board Lined with Kraft Papers
Duplex Kraftlined Asphalted Board
Waxed Board

Combined Board

Test Corrugated Sheets, A Flute and B Flute
Non Test Corrugated Sheets, A Flute and B Flute
Solid Fibre Sheets

Kraft Paper

Plain and Watermarked, Printed and Unprinted, Natural, Colored, Semi-Bleached and Full Bleached

Machine Glazed

Wrapping
Bag
Gumming Kraft
Tire Wrap
Bakers' Manila
Envelope

Fourdriner Machine Finished

Wrapping
Bag
Butchers
Gumming Kraft
Tire Wrap
Envelope Kraft
Multiwall Bag Papers
Tile Mounting Kraft
Laundry Manila
Blue Laundry
Pattern Paper
Macaroni Paper
Drug Bond
Orange Hardware
Bakers' Manila
Brushkraft
Raisin Tray
Battery Paper
Spinning Kraft
Cheese Curing
Cartridge

Duplex Asphalted Waterproof Paper Products

Sheathing Paper
Car Liner
Multiwall Bag Liner
String Inserted Celery Bleaching Paper
Asphalted Specialties

Paper Towels

Kraft, Semi Bleached and Full Bleached

Interfolded Paper Towels—
Singlefold
Doublefold
Fourfold
Singlefold Duplex
Harcraft Paper Towels
Roll Paper Towels
Duplex Roll Paper Towels
Household Paper Towels

Creped Paper Products

Plain Crepe Kraft
Asphalted Crepe Kraft
Waxed Crepe Kraft
Ham Wrap

Waxed Paper Products

Delicatessen Paper
Semi-Bleached
Full Bleached
Lettuce Crate Liners
Newspaper Wrap
Powder Box Liners
Waxed Specialties

Kraft Bags

Plain and Watermarked, Machine Glazed and Machine Finished, Printed and Unprinted, Single and Duplex Walls, Plain, Waxed and Asphalted, Sewed Creped, Flat, Self-Opening, Satchel Bottom, Square and Tube Styles

Grocery
Notion and Millinery
Garment
Pants
Barrel
Poultry
Nail
Laundry
Cigarette Carton
Doughnut
Liquor
Shopping
Carryall
Beverage
Bread
Confectionery
Pop Corn
Sugar
Raisin
Prune
Shot
Opaque Drug
Paper Milk Bottle
Dry Ice
Wet Wash Laundry
Coffee
Coffee Shipping Container
License Plate
Chocolate
Can End
Shoe
Ice Cream Bar
Ice Cream Carton
Briquette
Potato
Apple Chop
Bean
Insecticide
Garbage Pail Liner
Insulation
Chemical
Egg Crate Liner
Poultry Box Liner
Date
Beef
Celery
Bathing Suit
Butter Cube

Shipping Containers

Solid Fibre Shipping Containers
Test Corrugated Shipping Containers, A Flute and B Flute
Non Test Corrugated Shipping Containers, A Flute and B Flute
Interior Packing

Folding Boxes

Clothing
Laundry
Cake
Pie
Millinery
Blanket
Envelope
Sausage
Display
Lumber End Caps
Shells
Ice Cream Packing Trays
Folding Box Specialties

●

L. A. ENVELOPE MANUFACTURING CO.
Los Angeles

Products

Business Envelopes
Catalog Envelopes
Special Size Envelopes

●

LOS ANGELES PAPER BAG CO.
Los Angeles

Products

Paper Bags—All Types—All Grades
Grocery
Millinery & Notion
Garment
Shopping
Sacks
Hardware
Liquor
Sanitary Napkin
Carton
Bag printing of all kinds.

M

MEKAN-I-KLOTH COMPANY
Bellingham, Wash.

Products

Mekan-i-Kloth—
Soft Wiping Tissue
Substitute for Rags
Grease Absorbent
Sanitary-Disposable
All Ways a clean cloth

N

NATIONAL CARD, MAT & BOARD COMPANY
Los Angeles

Products

Artists Illustration Board
Backing Board
Embossed Boards
Linen Finish Boards
Calendar and Photo Mounts
Card and Mat Board Products
Coated Board
Cover Papers
Display Cases and Easels
Greeting Card Stock
Illustration Boards and Bristol
Paper Board Specialties
Pasted Board
Picture Backing Board
Poster Board and Paper
Box Cover Papers
Checkbook Cover
Cover Paper Decorated
Cover Paper Embossed
Foil Papers
Melton Mounts
Memo Book Cover
Mount Boards
Camera Club Mount Boards — Plain and Cut-out

O

OREGON PULP & PAPER CO.
Salem, Ore.

Products

White and Colored Bond
Writings
Envelope, White and Colored
Ledger
Mimeograph, White and Colored
Glassine, greaseproof, Innerwrap—Bleached and unbleached
Specialties
Manifold Parchment

OWENS-ILLINOIS PACIFIC COAST COMPANY
San Francisco

Products

Corrugated Shipping Cases (1)
Corrugated Fruit Box Pads
Liners and Collars (2)

Brands

(1) OnIzed
(2) No-Bruz

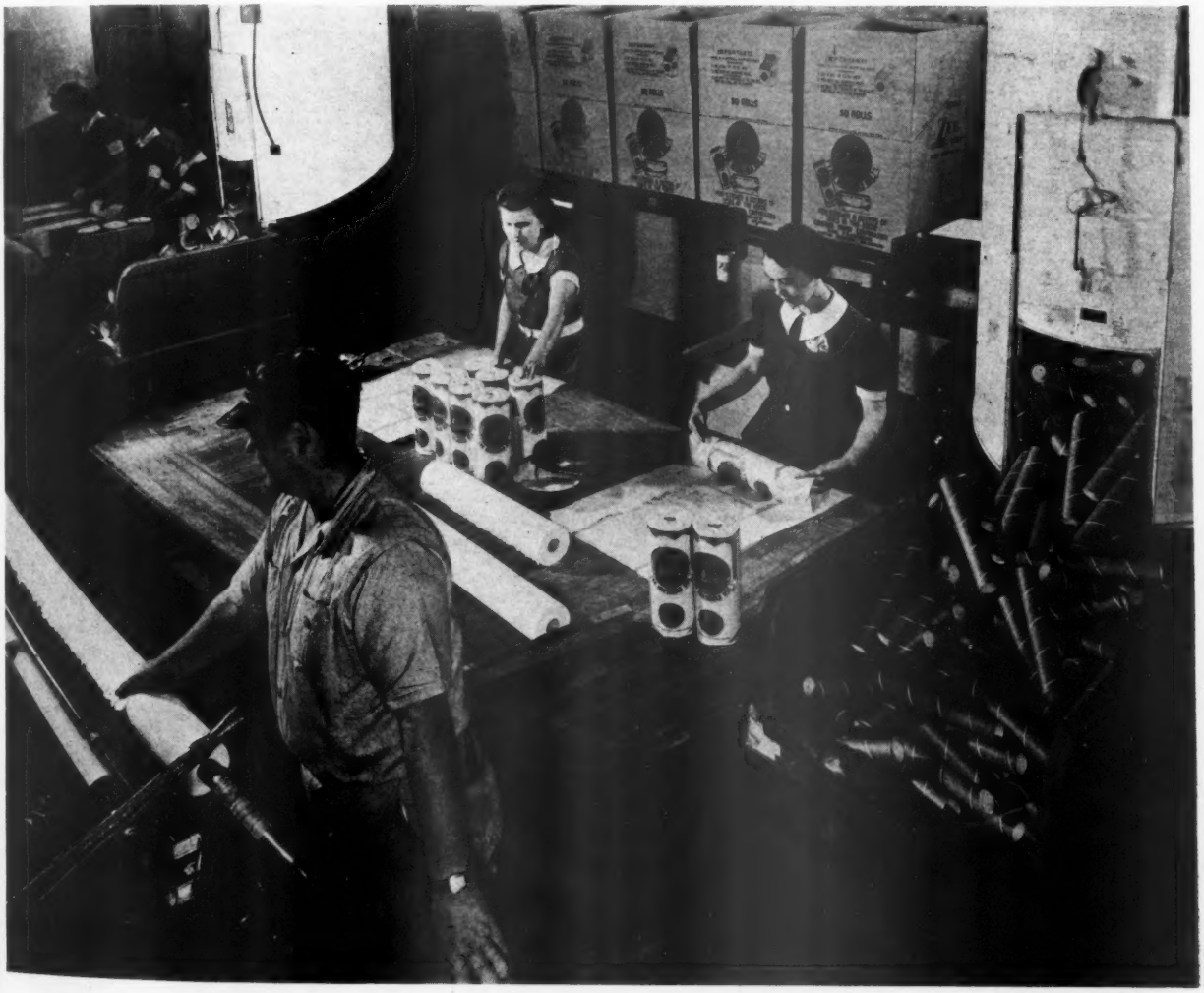
P

PACIFIC COAST ENVELOPE CO. DIVISION
San Francisco

Products

Printed and plain envelopes for mailing and filing

•



Courtesy Crown Zellerbach Corporation.

HOUSEHOLD PAPER TOWELS are a comparatively new product now requiring increasing tonnages of paper each year.

PACIFIC COAST PAPER MILLS
Bellingham, Wash.

Products

Toilet Tissue—
- Bleached, Manila and unbleached white roll
- Interfolded and Flat Pack

Mekan-i-kloth
Napkins—
- Colored, embossed
- Flat, quarter-fold
- Dispenser fold
- Sanitary napkins

Towels—
- Bleached Kraft, unbleached
- Sulphite and sulphate Towels

Brands

M. D. Tissue
M. D. Sanitary Napkins

●

PACIFIC COAST PULP & PAPER CO.
Richvale, Calif.

Products

Rice Straw Toweling

●

PACIFIC MILLS, LIMITED
Ocean Falls, B. C.

Products

Converting Plant, Vancouver, B. C.
Newsprint
Kraft Pulp
Sulphite Pulp
Kraft paper, M. F. and M. G. plain and striped
Butchers Manila
Sulphite tissues
- Toilet tissue
- Napkins
- Fruit Wraps

Towels
Bread Wraps
Printed Wrapping
Plain and printed waxed papers
Solid Fibre Shipping Cases
Gummed Kraft and Sulphite Tape—Plain and Printed

●

PACIFIC NORTHWEST PAPER MILLS Inc.
Division of Columbia River Paper Mills
Portland

Products

Safety Paper
Adwrap Decorated Wrappings
Specialties

●

PACIFIC ROOFING CO.
Portland, Oregon

Products

Roll Roofing Felts, Building Papers, Roof Coating and Asphalt
Complete line of Roofings—Shingles,

●

PACIFIC PAPERBOARD COMPANY
Longview, Wash.

Products

Combination Board
Plain Chip Board
Solid News
News and Manila Lined
Bleached Manilas
Mist Gray and Colored Boards
Container Board
Test Board
White Patent Coated Board
Solid Pulp Board
Egg Case Filler
Tag Boards
Folding Boxes
Wax Lined Food Trays
Sheet Lined Boards
Frozen Food Locker Cartons

●

PACIFIC WAXED PAPER CO
Seattle, Wash.

Products

Printed Waxed Paper—
- Bread Wrappers
- Candy Bar Wrappers
- Frozen Fruit & Vegetable Wrappers
- Transparent Cake Wrappers
- Adsealit Bands

Plain Waxed Paper
- Waxed Glassine
- Transparent Cake Wrappers
- Vegetable Crate Liners
- Delicatessen Paper
- Colored Twisting Papers

Bags—Plain and Printed
- Glassine—Waxed and Unwaxed
- Cellophane
- Window Bags
- Dry Waxed Bags
- Laminated Bags
- Specialty Bags of All Kinds

Tredonia Moistureproof Show Case Boxes with Cellophane windows for doughnuts, sweet doughs, layer cakes, and bakery products of all kinds

●

PALMER-BINGHAM ENVELOPE CO.
606 E. 12th St.
Los Angeles

Products

Greeting Card Envelopes
Wedding Announcement Envelopes
Baronial Type Envelopes
Commercial Envelopes

●

PAPER SUPPLY CO.
Los Angeles

Products

Resale Rolls of—
- Shelf Paper
- Tissue Paper
- Holly Paper
- Decorative Wrappings
- Cellophane

Distributors:
- Ribbons, Plain Colors or Decorated for every use
- Ribbons made of "Pliofilm"
- Glassipa Cellophane Soda Straws, all colors for hot or cold beverages

●

PARAFFINE COMPANIES, INC.
Emeryville, Calif.

Products

Asbestos Siding Shingles
Mineral-Surfaced Shingles
Thermoslab (thick roof slabs)

Roll Roofings
- Mineral-Surfaced Roofings
  - a. P & B
  - b. Malthoid
  - c. Durable
- Smooth-Surfaced
  - a. P & B
  - b. Malthoid
  - c. Durable
  - d. Santo
  - e. Paramount
  - f. Raintite

Aluminum Roofings
- a. Pabco Alumi-Shield

Building Papers
1. Urban Sheathing
2. P & B Light Bldg. Paper
3. Doublekraft
4. P & B Heavy Bldg. Paper
6. 15-lb. Felt
7. Pabcotite

Commodities
1. Asphalt Roofing Felt
2. Asphalt Sheathing Felt
3. Deadening Felt
4. Blue Plaster Board
5. Plaster Lath
6. Rosin-Sized Sheathing

Roof Coatings and Plastics
1. Vitalized Fibre Roof Coating
2. Plain Fibre Roof Coating
3. XXX Coating
4. Pabcobond No. 1072
5. Hydroseal
6. Lap Cement
7. Gutter Paint
8. Floatine
9. Roofing Asphalt

Car Linings
Red Liner
Mulch Papers
Pipe Wrappings
Fibre Wallboards
Rock Wool
"Grip - Tread" Mastipave Industrial Floorcovering

Brands

Pabco Brands on all

●

PATERSON PACIFIC PARCHMENT COMPANY
San Francisco

Products

Patapar Vegetable Parchment—Plain, Printed, Waxed and Creped
Durapak Insoluble Crate Liners and Wet Strength Paper—Plain, Printed and Rippled
Patapar Cookery Parchment
Parchkin Art Parchment
Patapake and Patawite Printing Paper
Patawite Manifold Paper
Waxed Ice Cream Can Liners
Waxed Paper

●

PERFECTION TWINE CO.
Camas, Wash.

Products

Specialty Bags—
- Mattress Proof Containers
- Mattress Bags
- Casket Covers
- Multi-wall Bags
- Specialty Shipping Bags
- Furniture Bags, etc.

Paper Twines and Cords—
Seaming Twines
Fleece Twines
Handle Cord Twine, etc.
Molded Fibres
Tacking Strips

•

PIONEER DIVISION THE FLINTKOTE COMPANY
P. O. Box 2218, Terminal Annex
Los Angeles, Calif.

Products

Roofing Division

Rag Roofing—Dry Felt, all weights, 12 to 108 lbs.
Asphalt Mineral Surfaced Shingles
Asphalt Emulsion
Rosin-sized Sheathing
Blue Plasterboard
Insulating Papers
Asphalt Products, Paints, etc.
Mulch Papers
Pipe Wrap Coverings
Car Lining Papers
Duplex Kraft Sheathing
Asphalt Saturated Felt

Box Board & Container Division

Pioneer Super White Patent Coated Box Board
Pioneer Super Manila
Pioneer Super Mist Grey and all colors
Pioneer Super Suit Box Boards
Pioneer Super Poster Card Board
Pioneer Black Ebonkote Board
Pioneer Show Print Board
Pioneer Solid News Board
Pioneer Kraft Board Liners
Pioneer Jute Board Liners
Pioneer Pasted Chip
Pioneer Colored Manila Lined Boards
Pioneer Bleached Manila Lined Boards
Pioneer Book Lined Chipboard
Pioneer News Lined Chipboard
Pioneer Shirt Boards
Pioneer Division Boards
Pioneer Fruit Box Liners
Pioneer Fruit Box Shims
Pioneer Kraft Metal Lath Backing
Pioneer Plaster Board Liner (kraft)
Pioneer Corrugated Containers
Pioneer Corrugated Partitions
Pioneer Corrugated Beer Cases
Pioneer Corrugated Canners Cases
Pioneer Corrugated Shipping Cases
Pioneer Corrugated Export Cases
Pioneer Corrugated Display Cases
Pioneer Corrugated Display Stands
Pioneer Single Faced Corrugated Rolls
Pioneer Solid Fibre Containers of all kinds
Pioneer Solid Fibre Display Cases and Stands
Pioneer Solid Fibre Partitions

•

POMONA PAPER PRODUCTS, INC.
Pomona, Calif.

Products

Waxed Paper Rolls in Cutter Edged Boxes
Paper Napkins for home use

•

POWELL RIVER CO., LTD.
Powell River, B. C.

Products

Newsprint
News Grade Sulphite Pulp

PUGET SOUND PULP & TIMBER COMPANY
Bellingham, Wash.

Products

Unbleached Sulphite Pulp

R

RAYONIER INCORPORATED
San Francisco, New York and Seattle

Mills at:
Fernandina, Florida
Hoquiam, Washington
Port Angeles, Washington
Shelton, Washington
Tacoma, Washington

Products

Dissolving Pulp for rayon and staple fibre, cellophane, acetylation, plastics, impregnation, etc.
Bleached Sulphite Pulp for the paper industry
Paper—Sulphite bond, ledger, writing, mimeograph and specialties

S

ST. HELENS PULP & PAPER CO.
St. Helens, Ore.

Products

Bleached and Unbleached Kraft Paper:
Wrapping—both M. F. & M. G.
Envelope
Gumming
Waxing
Bag
Meat Wrapt—Full bleached, semi-bleached
Tire Wraps—Printed or Plain
Fruit and Canteloupe Wraps—Printed or Plain
Box Liners
Toweling
Tissue
Towels—Interfolded & Rolls
Delicatessen—Waxed, Rolls, Cartons, Interfold
Printed Papers of all Kinds—
Paper Bags—
Grocers
Garment
Notion
Beer
Tympan Papers—
Oiled Stencil-Back

•

ST. REGIS PAPER CO
Kraft Pulp Division
Tacoma, Wash.

Products

Sulphate Pulp — Bleached and Unbleached

•

SALINAS VALLEY WAX PAPER CO.
Salinas, California

Products

Waxed Crate Liners
Waxed Specialties
Asphalt Laminated Kraft
Car Liners
Building Paper
Laminated Specialties

SANI-GARD COVER CO.
Los Angeles

Products

Paper Toilet Seat Covers

•

SCHMIDT LITHOGRAPH CO.
San Francisco

Products

Lithographed Labels
Lithographed Cartons
Lithographed Posters
Lithographed Display Advertising
Lithographed Direct Mail Advertising
Coated Papers
Corrugated Products

•

SHERMAN PAPER PRODUCTS CORP.
Los Angeles

Products

Baking Cups
Fluted Cake Pan Liners
Die Cup Liners
Labels
Printed Gummed Cake Bands
Cake Rounds
Corrugated Glassine Products
Embossed and Printed Glassine Doilies
White Waxed Corrugated Circles
Spruce Cake Rounds

•

SIDNEY ROOFING & PAPER CO., LTD.
Victoria, B. C.

Products

Box Board
Test Board
Felts
Building Paper
Roofing
Bottle Wrap
Asphalt Shingles
Groundwood Pulp

•

SOUNDVIEW PULP CO.
Everett, Wash.

Products

Bleached Sulphite Pulp

•

SPAULDING PULP & PAPER CO.
Newberg, Ore.

Products

Unbleached Sulphite Pulp

U

UNION BAG & PAPER CORP.
Los Angeles
Converting Plant

Products

Grocery Bags, Sulphite and Kraft.
Glassine Bags.
Candy Bags.
Notion and Millinery.
Waxed Bags.

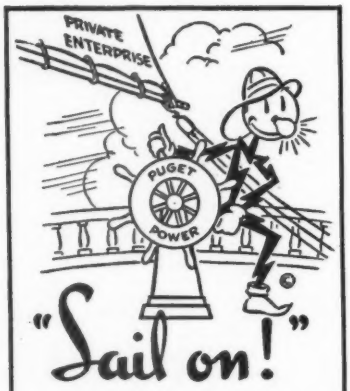
Coffee Bags, Plain and Fancy Printed.
Nail Bags.
Transparent Cellulose Bags (cellophane and sylphrap).
Egg Crate Liners.
Coffee Bag Shipping Containers.
Special Bags of Varied Nature.
Printed Bags—one to 5 colors.
Shopping Bags
Carry Bags
Poultry Bags
Flour Bags
Standard Sacks—Single Wall or Duplex
Liquor Bags
Bread Bags
Doughnut Bags

●

U. S. GYPSUM CO.
Southgate, Calif.

Products

U. S. G. Asphalt Shingles
Thatch Point Roll Roofing
Star Slate Roofing
Star Corrugated Roofing
U. S. G. Specification Roofing
Cascade Roofing
Gold Star Roofing



"Sail on!"

The winds of adversity may reach a mighty gale, but the good ship PUGET POWER "sails on."

In spite of rocks and shoals we forge ahead, determined:

1. To continue to carry dependable electric service to more than 206,000 customers at the lowest possible rates.

2. To protect the jobs and serve the general best interest of 2750 loyal Puget Power employees, who are devoting their best efforts in the service of their fellow-Washingtonians.

3. To protect the investments of 13,000 and more people of Washington whose savings have provided the capital for our notable achievement.

4. To defend private enterprise and the American way of life; to help build a greater State and a greater Nation.

PUGET SOUND POWER & LIGHT COMPANY

U. S. G. Asphalt Saturated Felts
U. S. G. Building Felt
U. S. G. Saturated Sheathing
Kraft Sheathing Paper
Deadening Felts
Duo-Color Sheathing Paper
Blue Plasterboard
Base Sheets
White and Black Top Cap Sheets
U. S. G. Roof Coatings and Cement
U. S. G. Asphalt Emulsions
Chip Paper
Roofing Felt

●

U. S. TISSUE CONVERTING CO.
Los Angeles

Products

Tissue Garment Bags
Clothing Boxes
Millinery Boxes
Glove Paks
Tie Paks

●

UNIVERSAL PAPER GOODS CO.
Los Angeles

Products

Special Envelopes
Filing Containers

V

VANCOUVER KRAFT MILLS
Port Mellon, B. C.

Products

Unbleached Sulphate Pulp

W

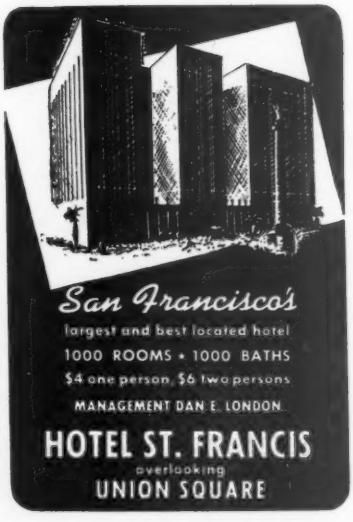
WASHINGTON PULP & PAPER CORPORATION
Port Angeles, Wash.

Products

Newsprint

●

WEST COAST PAPER PRODUCTS CO.
Portland, Oregon



Products

Bottle Caps

●

WESTERN CONTAINER COMPANY
Seattle, Wash.
Portland, Oregon
(California Container Corp.)
Emeryville, Calif.
Los Angeels, Calif.

Products

Corrugated Fibre Containers for All Commodities—
Fruit and Vegetable Canners Cases
Frozen Food Shipping Cases
Egg Cases
Dried Fruit Cases
Baby Chick Boxes
Corrugated Fruit Packing Supplies
Apple Boxes
"Fruit Cradles," "Wrapaks"

●

WESTERN MANUFACTURING & SUPPLY CO., INC.
Los Angeles

Products

Printed Gummed Sealing Tape
Special Gummed Tape in rolls
Gummed Labels, Printed and Perforated, in sheets and rolls
Eveready Sealers
Automatic and Pull-type Gum Tape Sealers

●

WESTERN PAPER CONVERTING COMPANY
Salem, Ore.

Products

Adding Machine Rolls
Glassine and Confectionery Bags
Candy Bags
Cellophane Bags and Specialties
Cash Register Rolls
Aluminum Foil, printed
Greaseproof Specialties
School and Commercial Stationery
Wrapping Specialties
Mechanical Bound and Sewed Composition, Note and Memo Books

●

WESTERN TRANSPARENT BAG CO.
Los Angeles

Products

Printing and Manufacturing Cellophane Bags

●

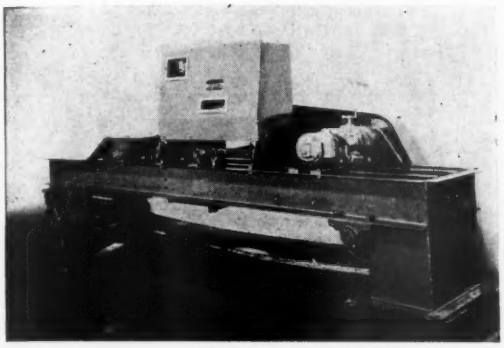
WESTERN WAXED PAPER CO.
Oakland, Los Angeles and Portland

Products

Waxed Papers—Printed and Plain
Waxed Paper Bags—Printed and Plain
Celloshine Bags—
Printed and Plain
Kleerwrap
Riegelite
Western Opaque
Butter Wraps
Bread Wraps
Candy Wraps
Transo
Shredded Waxed Paper
Icepak
Adsealit Bands
Egg Crate Lining Bags

CONTINUOUS

FEEDING —— WEIGHING



The Feedoweight, proportioning and batching machine, correctly and uniformly feeds such materials as LIME and SALT CAKE by weight.

The Weightometer accurately weighs CHIPS, HOGGED FUEL and SULPHUR without interruption of flow over belt conveyors.

MERRICK

Offers in the Feedoweight and Weightometer
Unexcelled Accuracy and Dependability

MERRICK SCALE MFG. CO., Passaic, New Jersey

IRVING R. GARD & CO., LOWMAN BLDG., SEATTLE, U. S. A.

Gummed Tape
Lettuce Crate Kraft
Plant Covers
Waxfibre
Defiance Sheathing Paper
Bradtite Waxsheen—
Printed and Plain

●

WESTMINSTER PAPER CO., LTD.
New Westminster, B. C.
Products
Toilet Tissues—
Plain, creped, glazed
Wrapping—
Kraft and Sulphite, 15 to 40 lbs.
Vegetable Fruit Wraps—
Plain, oiled, printed
Tissues, all colors
Towels and Napkins
Waxed Paper, plain and printed
Specialities
Sanitary Napkins

●

WEYERHAEUSER TIMBER CO.
Longview, Wash.
Everett, Wash.
Products
Bleached Sulphite Pulp
Unbleached Sulphite Pulp

British Imports of Paper Making Materials Down

●During 1940 imports into Great Britain of paper making raw materials were valued at 13,133,829 pounds, a decline of 2,534,247 pounds, 16.1 per cent, from the 1939 imports value, and 2,908,938 pounds, 18.1 per cent, from the 1938 imports value.

Import Committee Summarizes Sixteen Year's Work

● In 1924, sixteen years ago, the Import Committee of the American Paper Industry was formed for the purpose of stopping a flood of illegal imports from European nations which were damaging all business in the United States, reports Warren B. Bullock, manager of the committee.

Dumping, misclassification and undervaluation were being resorted to, and these evasions of our Tariff laws were working havoc with American industry.

In 1923, the year before the Import Committee was formed, imports of dutiable paper totaled a value of $17,500,000. In 1939, the total value had dropped to $11,500,000. There was, therefore, produced in the United States, in 1939 alone, $6,000,000 worth of paper which, were it not for the Committee, would in all probability have been placed with foreign manufacturers. Of this amount, about $3,000,000 was for wrapping papers, $1,000,000 for book and other printing papers, and the balance in other grades of paper and board.

Computing the decrease in imports since the Import Committee was formed, there has been a total of between $60,000,000 and $65,000,000 of business placed with American mills in the years from 1924 to 1939 inclusive which, on the basis of imports in 1923, would have been purchased abroad.

Practically all of this diversion of purchases from foreign to domestic mills has been the result of the Import Committee's work in stopping the misclassification, dumping and under-valuation of imported papers. The enforced payment of the proper duties eliminated much of the foreign competition.

Intangible results of the Committee's work are many. Not the least important is the fact that much paper formerly admitted duty free as standard newsprint is now subject to duty. This does not show in statistics. Another factor in the Committee's work is the intangible, though no less real, effect on the domestic price structure resulting from the elimination of under-priced foreign papers.

The Import Committee has also been responsible for all of the detailed work in connection with tariff legislation, such as the Tariff Act of 1930, and the efforts, even though not always effective, to prevent the wrecking of domestic markets by duty reductions through Reciprocal Trade Agreements.

While the active competition of European mills is for the time being negligible, many questions involving competition with such countries as Canada, Great Britain and Japan are constantly arising.

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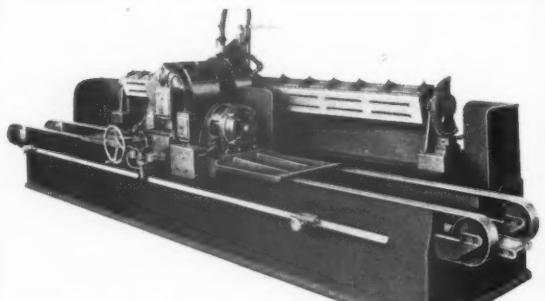

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